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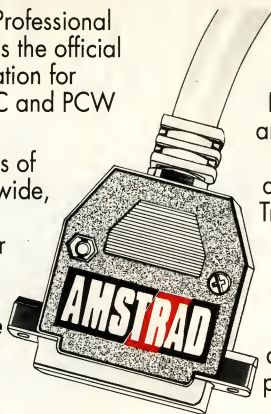
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Their role in the industry



**T**he Amstrad Professional User Group is the official support organisation for Amstrad PC, PPC and PCW owners.

With thousands of members nationwide, the Amstrad Professional User Group has proved, beyond doubt, to be **the** essential add-on for Amstrad Computer Users.



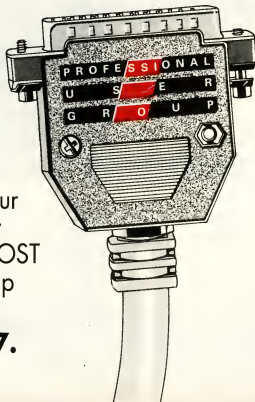
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## FOREWORD

Where it's at, man.

This is my last editorial for 8000 Plus – there, that got your attention, didn't it? So I thought I'd leave you with the (doubtful) benefit of my thoughts on the long term future of the PCW.

Of necessity magazines have to worry about the market they service, and get it pretty well right or die. 8000 Plus has gone from strength to strength over three years and is now bigger-selling and better than ever. If we hadn't got a realistic view of the PCW market we could never have done it. So why has the PCW succeeded so brilliantly when so many computer pundits pronounced it dead on arrival, and have ignored it ever since in the hope that it would go away and prove them right?

Clearly they got it wrong. What they saw was a rather dead-looking box full of eight bit technology, and an operating system that had been declared dead and then buried with the hippy movement. They saw this because they were looking to the computer manufacturers for a constant supply of techno-fixes instead of looking for solutions to real world problems.

Even now there is an element of 'wow, man, the colours!' to the computer press as they parade the latest monster from the baron's dungeons – bigger, faster, brighter and, of course, more expensive, before your eyes. All dead pan, as if there were some real prospect of you selling your house, spouse and children to put a deposit on it.

The power and excitement of computers lies in their flexibility, their ability to do so many things, but that's rarely what people buy them for in real life. People – and companies – usually buy them to solve specific problems. In so many ways the PCW was the first mature product for the home computer market. It offers a complete solution to a very common problem – the production and presentation of the printed word.

If it did nothing else it would have been a success. The fact that you also get a good, general purpose computer is a bonus.

So how do I see the future? Through rose coloured glasses. There will still be people getting excellent service from their PCWs at the turn of the millennium. Write on, man.

## Technical Writer Required

As you will have seen from this month's Foreword, there have been a number of staff changes at work in the 8000 Plus office. Steve Patient is moving to assume the role of Technical Editor with PC Plus, 8000's sister magazine, while Sharon Bradley takes over the hot seat from the beginning of the next issue.

We're now looking for a Technical Writer to complete the small but lively team charged with the impossible responsibility of putting together the best-selling magazine around for the PCW. We need somebody who has a) a sound working knowledge of the PCW and its operating system b) the ability to write with lucidity and zest on any aspect of those fields and, finally, c) a sense of humour.

If you think you've got what it takes, apply in writing with a full CV to The Editor, 8000 Plus, 4 Queen Street, Bath, BA1 1EJ.

## Competition winners

It's always a pleasant duty to hand out prizes and this month brings double the pleasure. Due to the gremlins which plagued the LocoScript Competition from the very beginning, the winners were not named in last month's issue. So, with a hail of trumpets and fanfare of flowers, 8000 Plus would like to congratulate the following people who spotted the differences:

First prize went to Richard Canterbury from Newport. The runners up were, Mrs D H Craig from Stoke Newington, J T Anderson from the Isle of Wight, N B Turner from Whitstable and Dr J Wales from Sheffield.

To these victors go loads of Locomotive spoils. (We hope to be running another 'Spot the 8000 differences' competition soon!)

There was also last month's battle of wits to be won. Mr M A Claridge, again from the Isle of Wight put these immortal words of wisdom into the mouth of Jimmy Tarbuck to win a copy of HiSoft C:



The winning caption in last month's competition came from Mr. M A Claridge.

Look Al, I know you've got problems but when I'm talking you about my tracheotomy you could at least show a bit of interest

## NEWS PLUS

by Tim Smith

## Flipping Huge!

A new version of Flipper from Software Imperative should be available by the time you read this. Previous versions of this utility have enabled those PCW owners with 512k of memory on their machines to run two separate environments. For example LocoScript and SuperCalc running simultaneously. The new version will continue to provide this but, more importantly, it will also run in conjunction with Isenstein's RAM board.

During our tests on the board we realised that it couldn't handle Flipper due to the fact that the software looked for 512k of RAM. If it found anything other than this it assumed that 'not 512k' equals less than 512k. This problem has now been overcome.

The combination of Flipper and the RAM board should mean that the PCW owner now has access to two huge environments. Andy Wilton, the designer of Flipper, claims that it is now feasible to have LocoScript running in a full 512k of memory and still have 496k left to run CP/M based programs and utilities.

Designing this Turbo Flipper was not the easiest job in the world however. The peculiarities of the RAM board mean, according to Andy Wilton, that '...the PCW's central processor can't fetch instructions from it. This isn't a problem if you just want to use the RAM as M: drive but does cause trouble when a piece of software tries to run code there.' This latter case was a thorn in Flipper's side due to the fact that a portion of it remains resident in the memory of the PCW. This is the 16k reserved message, familiar to Flipper users.

'The solution we ended up with,' continues Andy, 'should

make the new version of Flipper compatible not only with the Isenstein board but also any future memory add-ons produced by any manufacturer. From now on if a board works with an existing version of LocoScript 2 and CP/M it should work with Flipper.'

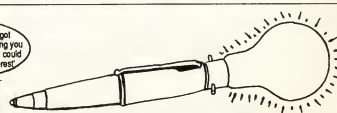
These claims are interesting on two levels. Firstly, Flipper will be the first piece of software written specifically with the RAM drive in mind. It is unlikely that it will be the last to make use of the massive expansion in the power of the PCW which the Isenstein board should provide. Secondly, the idea that someone else might be considering the production of a RAM upgrade is certainly a good sign for the future of the machine.

As yet we haven't run tests on Flipper with the RAM board. As soon as we do you will get the information. Obviously we won't be able to test claims that it will run with any board, well not until someone develops another one.

If you would like to find out more you can contact Software Imperative on (0453) 886931. Isenstein are on (0244) 822768.



Two PCW heavyweights improving the power of your machine. But are there bigger plans afoot?



Dingbyte: What is the computer related word or phrase? No prizes but the answer's on page 8.



Alan Lewis with his illustrated effort, wins the Hisoft Pascal 80 compiler:

**Tarby:** 'What is your advice for the aspiring young computer entrepreneur?'

**Alan:** 'Get yourself a good Korea.'

Finally, S P Doherty wins the Hisoft Nevada Cobol compiler with this effort:

**Tarby:** 'Hand-held microphones, Alan - a great idea but don't you think that you may be a little late again with this one?'

As we said the criteria for winning and losing was totally subjective and we'd like to thank to all those people who entered both competitions. If you didn't win there's always this month's devilish diversion which could net you a fast, furious, EC2400 modem.

### Ghost of a Chance

The PCW has a new game. Level Nine, the producers of the Ingrid series, have brought out a text adventure by the name of Scapeghost. You get to play an ex-policeman called In-spectre Alan Chance who died under dubious circumstances. Not only that, but since his death, he has been framed for crimes he didn't commit.

As the gallant bobby you are reincarnated in your old haunts. You are there to clear your own name and catch the bad guys, or gals. Not only do you have your detective's skills and growing psychic powers you also have the help of other spirits. The hitch, and there has to be one, is that you only have three nights to solve the puzzles.

The game is in three parts and features what Level Nine claim are high quality graphics. We will be reviewing the game as soon as possible. Scapeghost costs £19.95 and Level Nine can be contacted on (0934) 814 450.



### Dave, meet Dave

When your discs corrupt and precious data appears lost there are a number of options; weep, reformat and lose all the data or call Dave's Disc Doctor Service Ltd. So many people have been taking the second course of action that Dave Smith, who instigated and works unpaid for the company, was starting to get snowed under. As he hates to turn away any desperate users and their money (all of which goes to charity - predominantly BACUP - the British Association of Cancer United Patients) he needed help.

Dave Axford, who is associated with PCW-File and the BOOG bulletin board, offered his services and has joined the company. He is a sufferer of the debilitating disease Myalgic Encephalomyelitis or M.E. Consequently any profits he makes from the service will go to the M.E. Association.

Dave Axford joins the service as the first tranche of Company donations are made. £1000 will go to BACUP and £300 each to Crisis at Christmas and the Samaritans.

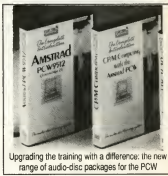
The expansion of the service should allow many PCW owners to work a little more easily with their precious discs. If you ever have need of the service you should phone Dave Axford on

(0428) 56438 or Dave Smith on (089283) 5974. With that, it's goodnight from him and it's goodnight from him.

### Reel them in

Headline Communication are upgrading their successful range of Reeltime audio-disc training packages for the PCW. The new packages will be called, unsurprisingly, Reeltime Version 2.

Headline maintain that over the last three years they have trained over 100,000 users on various machines. In order to increase their market share they have decided to enter into dealership agreements as opposed to simply retailing their own wares. Along with the upgrade and the expansion of the company comes a free helpline for users of the tapes and all for £29.95.



Upgrading the training with a difference: the new range of audio-disc packages for the PCW

## CLUB

## NEWS

### The CP/M Show

Gently overshadowing the recent PC Show was the CP/M (and MSDOS) User Group secondhand computer sale. Held at Spring Lodge Community Centre in Witham, Essex, it was rated a great success by everyone who attended. Fearlessly pitted against the first public day of the PC Show, the sale attracted more than 200 visitors to its impressive array of 18 stands, vendors and vendees appearing from as far afield as Kent.

Since the user group serves both CP/M and MS-DOS users, there was a mix of material on the software side. Most of it was MS-DOS stuff but the stands were groaning under the weight of CP/M literature. This ranged from slightly tattered copies of the famous *CP/M The Software Bus* (by Andrew Clarke *et al*) to some seriously dense documentation on GSX.

On the hardware side the range was even greater. There were many complete and working machines - mainly CP/M - including one machine running MP/M, the



No one need ever be short of a fact or three again

multi user version of CP/M. There were several Apple II machines and boards for them, hardly surprising since many were used with Z80 boards to run CP/M. But pride of place for any connoisseur of CP/M computers had to go to the rather grubby Epson QX-10 selling for a derisory £150. This beautifully styled machine boasts two 5 1/4 inch disc drives and a high resolution 80 by 25 screen. For those who prefer their hardware this place was an Aladdin's cave of goodies. There were power supplies,

ancient (five years?) chip packed boards from extinct mainframes and a seemingly endless supply of cheap disc drives. But it never hurts to have a spare power supply with plus and minus five and 12 volts on it - really.

The CP/M User group sale made a profit of about £100; those who bought were delighted and everybody plans to do it again next year. We'd like to be there.

### Hereford Awake.

Yet another User Club has come to our attention. This one is based in Hereford and is run by David Rose.

The Hereford Amstrad User Group began with three members but has now expanded to fifteen. They meet on the first Wednesday of each month between 7pm and 9(sh). In past meetings they have dealt with such topics as desktop publishing and a tour of 'The Money Manager'.

It would appear that there is a great deal going on in the west. The number to contact David Rose on is (0432) 267123.



## A bridge too near

CP Software have brought out a new Bridge game for the PCW called Bridge Player 2150 Galactica. It has been co-written with Ms Nicola Gardner, the winner of two world championships (1982, 1985) and 'a teacher of world class'.

The game comes with a comprehensive tutorial and 100 tutor hands. It has a post mortem facility, scoring of hands to rubber and special cheat options. We will most certainly be reviewing the package just as soon as we can. It's available from CP software at £29.95. Their telephone number is (099382) 3463.



## Invoice of the people

Cornix Software have launched a new product called Cornix Invoicing. According to the company, the package is 'stand alone' and does not tie the user to a particular accounts package.

The program consists of a database to hold regular customer details, stock items and prices. Cornix say that it can handle blanket discount and settlement discount. It also offers a reports section which is said to be able to provide comprehensive invoice analysis, showing gross profit, sales figures for individual items or a range and a detailed listing of all invoices produced.

Information can be ported from the database into reports or can be entered manually. There is also a facility for storing standard paragraphs. It sounds interesting and as soon as we get a review copy we will give the package a thorough examination. It costs £59.95 inclusive of VAT. Cornix can be contacted on (0462) 422232.

## The return of the plastic case



They're finally back, the caring disc user's friend

SBS Computer Supplies have taken note of popular opinion. They have secured a large and regular supply of Maxell discs in plastic cases. The sudden demise of the protective casing caused many people anxiety a few months ago so this should come as very good news.

The SBS deal is this; ten CF2 3 inch discs are available at £19.96 plus postage and packing. Not only that, but they are also offering a free 3 inch disc drive cleaning kit worth £5.95 which will be sent with every order of 20 discs.

Sally Hayward the marketing manager for SBS commented that '...in order to satisfy the market we decided to stock the plastic cases again.' And very laudable that is. You should remember however that you have to buy the discs to get the plastic cases. If you wish to place your order you should phone (0273) 423523.

## Bottom feeding time

The Star LC-10 dot-matrix printer has long been a favourite buy for PCW owners. The company have now come up with a new range of reasonably priced nine pin printers

with the added advantage of extra wide carriages. The LC-15, for example, has been introduced, according to Star, '...to answer the demand for a wide-carriage version of the LC-10'.

When these people say wide carriage they mean just that. They claim that A3 paper in landscape mode can be handled by the new printer. The LC-15 also comes with a bottom feed facility. Working in conjunction with its optional pull tractor Star feel that the combination will be useful for label printing.

On top of all this is the introduction of the LC-10 II. Same carriage width as its forbear but, again according to the manufacturer, with a significant increase in speed. The LC-10 will give you 144 characters per second in draft Elite and 36 cps in near letter quality. The new version offers 180 cps in draft and 45 in NLQ. We haven't had the chance to put these to the test ourselves.

Prices for the two printers are as follows: the LC-15 is £399 while the LC-10 II costs £229.

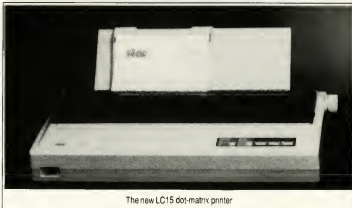
If you would like to contact the company you should phone them on: (01) 840-1800.

## Second opinion

Would you like to contribute your views to our reviews? We are going to be running a special desktop publishing feature in the very near future. We would very much like to hear from people with experience and knowledge of the following packages:

The Desktop Publisher, Fleet Street Editor Plus, Master Scan and Masterpaint, the Trojan Lightpen and Newsdesk International. Please write to Second Opinion (DTP), 8000 Plus, 4 Queen Street, Bath, BA1 1EJ.

## Answer to Dingbyte: Lightpen



The new LC15 dot-matrix printer

## SNIPPETS

### High ho silver away...

Have you had any dealings with a company called Disc Recovery Service - not to be confused with Dave's Disc Doctor Service? They are based at St Leonards Road in Bradford and keep writing to us, to Locomotive, to everyone and their aunt. If you have, then Snippets would be curious to hear your opinions on the service(s) supplied.

### Atchoo!

Another book about computer viruses. Having never heard of a PCW suffering from the slightest ache let alone a full blown virus we wondered why Price Waterhouse sent us a press release. Never the less, *The Complete Computer Virus Handbook* might be an interesting read if you are curious about such infections. Priced at £14.95 it is available from most bookshops.

### Draw partner

We reviewed PCW Draw in the July 1989 issue and complained of the fact that you couldn't print the Zoom screen or edit Details. Well, apparently you can now. HTB computers have sent us a new version of the program which we hope to review when time and space allow.

### RAMming speed

We said in last month's review of the Isenstein's prototype RAM board that it would not run Microdesign. We were wrong and have been told as much by several readers, Creative Technology and Isenstein. It most certainly does run but makes no use of the extra RAM. Sorry about that, there must have been a problem with our (prototype) board.

### Words made simpler-er

The Electronics Handbook by Jorge de Sousa Pires came into the office this week. Here is a sample from the Etymology of Computereese section: 'Flexible: emanates from the lat flexus, from flectere to bend. A dog is said to have FLOPPY ears when they hang loosely. A FLOPPY disk(sic) is therefore a disk which can be bent, not rigid.' So now you know!

# "The Rolls Royce of PCW desk-top publishing"

Amstrad PCW magazine, July 89.

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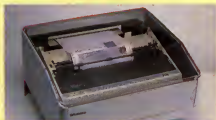
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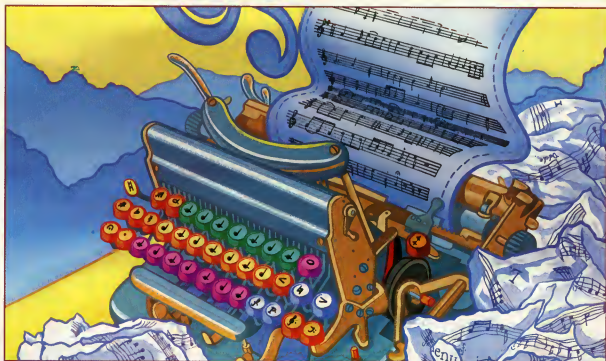
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# NOTE PERFECT

After two years' work, the Composer's Pen is here. Now you can prepare music manuscripts in exactly the same way that you create LocoScript documents.

Rob Ainsley conducts the investigation...

## Mixing it

You can, as hinted here, use your PCW to control MIDI instruments such as synthesizers. See 8000 Plus August 1989, page 26. MIDI interfaces from EMU on 0702 335747 at £89.95 and software from them to mix down your music for £59.95.

## THE COMPOSER'S PEN

£75 (£30 pocket version) • Composit Software • 021 456 1967

The PCW is not designed as a music machine. It can't make any nice noises – only a B flat beep (a slightly sharp B flat, to the annoyance of those with perfect pitch), a few clicks and whirs in the disc drive, and that irritating high-pitched whine from the monitor. Perfect, maybe, for a Stockhausen oeuvre or a John Cage work, but not kind on the ear.

This is virtually insurmountable; you can use the PCW to control various musical instruments through interfaces, using it as a sophisticated mixing desk, but as ever in life, two semiconductors don't really make a conductor. You need to spend a lot of money – a hundred pounds for a MIDI interface and software. Perhaps even another couple of hundred pounds on synthesizers and those infernal electronic guitars.

But there's no reason why the PCW can't be used as a music processor to prepare, edit, store and print out musical notation in the same way as you use LocoScript to process your letters. At least, no good reason. There's a bad reason, which is that the machine is a dedicated word processor – like most of its owners. The screen was only ever meant to take characters, not musical notes.

Writing a program that lets you 'type' notes on screen and print them out just as you do with words demands a lot of clever programming and pushes the PCW into something it was never meant to do; it's like expecting James Joyce not only to dash off a few chapters of *Ulysses*, but to finish it off by singing a few Irish folk songs, accompanying himself on the guitar. (In fact, he was a fine tenor, but a rotten guitarist).

After two years' work, this is just what Composit Software have done – produce a music manuscript program

for the PCW, aimed at professional musicians, students and teachers – anyone, in fact, who needs to produce musical copy.

## Hommage a LocoScript

Right from the start (after a digitised opening picture of a stern Ludwig van Beethoven, evidently irritated by that slightly sharp B flat) there's a familiar look to things. The Composer's Pen has been modelled closely on LocoScript; so much so, in fact, that you can find your way through with only the occasional reference to the manual.

For example, the opening screen lists the files on the disc; you press C to create a new document, E to edit an existing file and P to print a file. There's also a bar across the top listing the effects of the function keys, just like LocoScript.

Creation of a new file is only possible if a 'template' exists on your data disc. This can be copied from the program disc and altered to suit the configuration you want – one staff or up to 99 linked ones, each named for the instrument. Any document you create starts off looking like the template, just as in LocoScript.

Editing a document first shows you the 'setup' – that is, how many staves there are and the names of instruments, just like the extreme left of an orchestral score. Pressing [F1] 'Music' shows the actual contents of the staves, notes, ties, bar lines, accidentals and all.

You scroll around using the cursors – up or down, right or left. There are 'quick moves' to let you jump around instead of scrolling, but otherwise this is where the first demonstration of how difficult it is to write a program like this appears: scrolling is very, very slow. This is one of the less desirable resemblances to LocoScript 1. However, it lumbers along fine, redrawing all the tied notes and rests

## 9512 note

The Composer's Pen not only works on the 8256 or 9512 printer but will also work with dot matrix printers on the 9512. You need one with Epson compatible graphic codes – which is most printers apart from some IBM types and Mac printers. If in any doubt check with your dealer before buying.



## J A R G O N B U S T E R

**Accidental** Not an unintended note, but one which is outside the key of the piece and therefore has something like a sharp, flat or natural sign in front of it  
**Adagio** 'slowly'

**Bartok** Bela Hungarian composer who wrote a lot of wacky pieces based on East European folk music, and the popular Concerto for Orchestra

**Beams** Notes joined together in groups with a straight line

**Beethoven**, Ludwig van German composer who took music from the Classical to the Romantic era and wrote nine of the most significant symphonies of all time

**Haydn**, Franz Joseph Austrian composer who wrote 104 symphonies, all a model of wit and skill, and all with strange nicknames such as the 'Miracle', the 'Clock', the 'Surprise' and the 'Razor Blade'

**MIDI** Musical Instrument Digital Interface - the system that lets computers handle music by representing notes as numbers

**Molto pesante** 'very heavily weighed down'

**Octave** The distance between two notes that sound the same but different - when men and women sing together, they usually do it an octave apart

and pauses and everything.

Entering notes is done via the keyboard using two sets of keys, one which controls the duration of the note, the direction of the stem and the octave, and the other of which sets the 'name' of the note. The QWERTY keys return ABCDEFG respectively, the + and - keys are used to increase or decrease the pitch of the note by an octave, and the [ and ] keys to increase or decrease the duration of the note (quaver to crotchet, crotchet to minim and so on). Other keys then add accidentals or dots. It's surprisingly easy to get used to and you quickly find yourself doing it unconsciously.

The CUT, PASTE and COPY keys work as they do in a word processor, letting you chop and change at will. To copy a section, you press COPY at the beginning, use the cursors to mark out your block, and PASTE it into the appropriate place. Recurring themes or parts can be copied and pasted around saving a lot of tedious rewriting - perhaps we'll see a revival of the Passacaglia as a musical form now? You can superimpose sections on top of other sections - useful for multi-line instruments where the number of parts played changes. This is quite a tricky manoeuvre but can lead to extremely impressive results, enabling multiple complex beams and phrasings, and is the only way of coping with musical problems like guitar and piano writing where the number of parts per staff can change from bar to bar.

The ability the program shows in handling even the most complex musical layouts is staggering. You can handle rests, ties, complex tuplets, double sharps and flats, any old key signatures (including Bartokian oddities such as the one consisting solely of a C sharp) or time signatures and you can lay out musical parts for anything from a single instrument up to a large orchestra.

Like LocoScript, The Composer's Pen is menu-based. You make selections from menus using [+ and -] and pressing [RETURN] or [ENTER] effects the choice while [CAN] abandons the menu and returns you to where you were.

## The key facts

Multi-line or transposing instruments are no problem; you can automatically transpose lines from any key to any other at the touch of the [F6] key. This is an incredible time saver - ask anyone who's ever had to write out a tune in C sharp minor for an E flat clarinet! You just press [F6] and mark out the block you want to transpose (you can only do it on one instrument at a time). Specify up or down and the key you want it to go into, and hey presto - or rather, hey *andante sostenuto* - the part is steadily redrawn in the new key, all accidentals and so on correctly transposed.

Most of the features (notes and chords, beams, rests, accidentals, bar lines and so on) show on screen as they will print out except for phrase marks which show as straight lines (they print out alright though). Compositions can be

orchestrated write out parts for the various orchestral instruments for a tune in such a way as to make sense. Shostakovich once orchestrated 'Tea for Two' in 45 minutes for a bet

**Passacaglia** Piece of music with the same bass 'riff' repeating over and over again while the top lines ramble on

**Sempre moderato** 'always moderately fast'

**Sonata** musical work for one instrument, possibly accompanied by piano, and the name given to a musical form that people have written PhDs on

**Stave** Those five lines that you write music onto

**Stockhausen**, Karlheinz Avant-garde composer who writes strange music full of beeps, scratches, pops and whistles, and gave rise to the quip 'Stockhausen? I've never heard any, but I've trodden in some'

**Transpose** Change a line of music from one key to another, the equivalent of translating a phrase from one language to another

**Tuplets** A group of notes played in a different beat to the rest. In Ravel's Bolero (tum ta-ta-tum tum ta-ta-ta-tum-tum) the ta-ta-ta is a triplet, three notes played in the time of one



## Second opinion

Felicity Rich (Felix to her friends) is studying at the Royal Academy of Music. She's just finished a music degree at The Queen's College, Oxford, where she also conducted the Oxford Philharmonia, and organised various jazzbands. She's also the owner of a PCW8512, making her the ideal person to give a 'professional's view'...

### How useful is it?

Brilliant - very useful, once you've got used to it. It's as quick as writing stuff out by hand, a lot neater, and a lot easier to change things. I'm always having to write out arrangements - for ensemble work, or the jazz band, when the trumpet player

doesn't turn up, for example - and here the transpose facility is really useful.

### Was there anything it couldn't cope with?

Not really. If you're doing really wacky modern music, Lutoslawski or something, you couldn't have some of the more squiggly stuff, but you could easily add it by hand afterwards. But it's got everything else.

### How easy did you find it to use?

Very easy to learn. The only thing is, it can be a bit slow with big stuff in it. It's so much like LocoScript, I was using it after two minutes, and just referring to the manual when I got stuck. It took a bit of time to find out how to cut a single note, but that's probably my fault for not reading the manual!

### How good is the printout?

The printed quality is quite good, certainly good enough. Some of the semiquavers go a bit square and blocky, and it's a bit different from standard musical handwriting, but it's perfectly readable. If you put it in front of the BBCSO at the Proms they'd moan a bit, but it would be quite readable.

### The crucial question - would you recommend it to your friends?

Oh yes, definitely! It's good fun playing about with it as well. The main thing is, having music that you can alter is such a major step. Writing out music takes hours and hours. Miss a bar out and it's drastic - you have to rewrite a whole page, whereas with this, you just stick in the extra bit in and it reformats the piece for you, numbering the bars too. It's a bit slow but it saves a lot of time.

saved to disc, copied and erased as normal. Text can be put in more or less anywhere, for directions or song lyrics. Words can be typed in under staves, for example, or just above them for where you want to specify 'sempre moderato' or 'adagio' or whatever.

Printing can be done either condensed (fine for multi-part compositions) or normally (for single instruments) in draft quality or bold (which uses two passes of the print head). You just select 'P' from the disc manager screen and

## Gives me that buzz

You can, by dint of certain arcane BASIC codes, make the PCW blipper buzz almost recognizable tunes. An example appears on the disc that comes with the 8000 Tips Collection (advertised in the Special Offers pages) called JINGOISM.BAS.

## And with a bit of swing, too

Perhaps the longest direction at the top of any well-known piece of music is that heading the first Promenade from Musorgsky's Pictures from an Exhibition. It says *Allegro giusto, nel modo russo, senza allegrezza, ma poco sostenuto*.

## Cheapskates corner

While you're saving up to buy 'The Composer's Pen' you can print out musical staves on paper in LocoScript. Just select half line spacing with (+LS) and use (EXTRA)Z to make the vertical lines, with (+UL)(+RA)(-UL) for the horizontal ones.



The opening screen with a bemused Beethoven. Will he hear the beep to remind him to turn over the disc while loading?



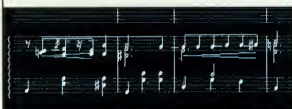
'You can quickly enter your own musical lines - even transpose them automatically



Beethoven's fateful Symphony No. 5 shows how orchestral parts can be linked



...and on printout. This is in condensed bold



Chopin's Waltz in C# minor on screen shows off a bit of complex phrasing...



...and on printout. This one is normal size bold

specify the bars or instruments you want printed out. Rather oddly, the document appears on screen in chunks at the size it will print out and then the PCW appears to dump this image to the printer. Printing is not fast - a whole page of orchestral parts in condensed bold takes five or six minutes - but is acceptable. Draft normal size takes only a minute or so for a page.

The print quality is very good and perfectly acceptable for professional use (though it's not publishing quality). You can also select just specific bars or instruments to be printed.

The cost of having music 'typeset' is so great - several hundred pounds for a small orchestral piece - that this program could save the musician, whether professional composer, or teacher writing out parts for the school orchestra, a lot of money.

The only problem with the program is that (like its molto pesante model, LocoScript) it can be slow, especially with large compositions. Reformating a piece (which is done with the obvious RELAY key) after altering a note or two can take several seconds. Many will find it easier to compose music in the usual way, with a piano keyboard rather than a PCW's, and then set the music onto disc once the rough shape is decided.

But it would be unfair to harp on the speed too much - after all, it's remarkable that the thing can be made to work on a PCW at all. Like the Haydn symphony, it's a miracle it got written in the first place. And then how much time it saves, and how impressive the results are!

The 'pocket' version lacks a few versions of the full version - complex tuplets and beaming, transposition and so on - but is perfectly adequate for music up to, say, GCSE standard.

The program comes with a very good tutorial and separate reference manual ringbound to open out flat, a quick reference card, and several example files. It has been clearly written with the same amount of thought and care as the program design. Everything is clear and explained in jargon-free English, and there's a good index. This sets an example to many 'professional' technical writers.

## Finale

An excellent program that has pushed the PCW into an area it was never designed for. It's easy to use, well designed and you'd be hard pushed to think of music it can't handle - all at a very reasonable price.

It's not fast, but then neither is LocoScript, and that hasn't stopped people writing novels with it. The Composer's Pen is essential for any PCW owners who need to produce musical copy - teachers, students and musicians of all kinds. The pocket version would be an ideal educational tool for anyone starting a GCSE or A-level course who has access to a PCW too.

When ordering you have to specify which PCW you have as the printer drivers are different in the 8000 and 9000 versions.

## THE COMPOSER'S PEN

### PLUSSES

- ▲ Good printed quality
- ▲ Easy to use
- ▲ Very powerful - handles any effect
- ▲ Transposes from any key to any key
- ▲ Cut, copy and paste sections
- ▲ Ideal educational tool
- ▲ Good manual

### MINUSES

- ▼ Slow in use

RANGE OF FEATURES	5/5	EASE OF USE	4/5
PERFORMANCE	4/5	DOCUMENTATION	5/5
8000 PLUS VALUE VERDICT 5/5			

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# EVERY WHICH WAY

Under CP/M the PCW is set up the way you're most likely to want to use it, but it can be made to work very differently

**A**s you get out of bed in the morning, reaching over to turn on your PCW while looking for a clean pair of socks, have you ever stopped to wonder how it knows what to do? Unlike you the PCW is never confused as to where the printer is, or how to get characters in from the keyboard. This is a wonderful arrangement right up until you suddenly feel a desire to do things differently, like getting characters in from the RS232 interface for example, or sending screen output to your new laser printer.

In fact there is quite a lot of confusion concerning the best way to make the PCW do things differently from the way it chooses to do them when first turned on. This is largely caused by a lack of understanding of the way CP/M itself sees the computer. So this month we're going to try and see things from the PCW's point of view and then, hopefully, persuade it to change its ways.

All computer operating systems have to have some way of dealing with the various bits and pieces of hardware (and software) to which they find themselves attached. In the case of the PCW the CP/M operating system thinks in terms of **devices** (this is in contrast to some operating systems that see everything as a file — even printers and keyboards).

CP/M divides devices into two categories, **logical devices** and **physical devices**. This is best explained thus: a physical device is something you can actually drop on your toes while a logical device is something you have to imagine dropping on your toes. This latter occupation is a good exercise for trainee Bhuddists.

Since it is relatively easy to identify the physical device that just hit your toe we'll work on logical devices first. In effect

these are channels that CP/M can use to communicate with the world. There are five logical devices supported by CP/M on the PCW (though there might be more or less on other CP/M systems depending on the whims of the company who implemented it).

## It's perfectly logical

These five logical devices are the same for all PCWs and are shown in the box. Physical devices are actually attached to the computer and assigned to a logical device using the **DEVICE.COM** utility. To see the current assignments just type **DEVICE** without any parameters (**DEVICE** is on side 3 of the system discs for 8000 owners or the CP/M disc for 9512 owners).

Once invoked, **DEVICE** offers to let you change the assignments, so you could, for example, assign the printer (physical device **LPT**) to the logical device **CONOUT**: everything you type then appears on the printer rather than the screen. If you fancy a taste of the way it was in the days of teletype terminals try this line:

**DEVICE CONOUT:=LPT**

and to switch it back again:

**DEVICE CONOUT:=CRT**

Much more useful would be assigning the logical device **LST**: to the screen to check that a page will look right when it prints out. You can have more than one logical device attached to a physical device and vice versa. This would be done thus:

**DEVICE LST:=CRT**

If you just type **DEVICE** with no parameters you will see that **LST**: and **CONOUT**: are send printer output. In fact you'll see it on screen and on the printer.

## XON going serial

The most likely reasons for you to be looking at **DEVICE** are because you have an interface fitted or (for 9512 owners) a new printer attached to the built-in Centronics port. Under CP/M 9512 owners need to send printer output to the physical device **PAR** (the built in Centronics port) with the line:

**DEVICE LST:=PAR**

while for both 8000 and 9512 owners the command to send printer output to the Centronics port of any interface that might be fitted is:

**DEVICE LST:=CEN**

If you've been unfortunate enough to inherit a nice old serial printer (it seems unlikely you'd choose to buy one) then there are other things you need to do. Serial devices of all kinds have to know more since, unlike the Centronics interface, RS232 interfaces can be configured in all manner of different ways. Usually the **DEVICE** utility can do enough to get a serial printer going. It can set the serial port to a particular speed and ensure that the XON protocol is being observed.

## Fade away

LocoScript 2 can cope with the built-in Centronics port on the 9512 so well that it doesn't require the daisy wheel printer to be fitted. Not so CP/M programs which can't find the second printer unless the daisy wheel printer is present. However, this doesn't apply when an interface is fitted. If you want to get rid of the daisy wheel then fit an interface.

## Logical devices

These are the same for all PCWs and the name includes the semi-colon. The names reflect the intended use though they are also important as an indicator of the direction data will travel when they're used. However, you can assign a logical device to an unsuitable physical device.

### CONIN:

This is short for Console Input and would normally be the keyboard. It is always an input device.

### CONOUT:

This is short for Console Output and would normally be the screen. It is an output device.

### AUXIN:

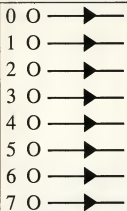
This is short for Auxiliary Input and is intended to be used with something connected to the expansion bus at the back of the PCW.

### AUXOUT:

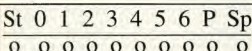
Short for Auxiliary Out and intended for sending data to the expansion bus.

### LST:

As you might guess this is a logical device that would normally be connected to the List device, or printer and is for output only. It is often re-assigned to the screen.



A parallel (Centronic) interface can send a complete byte in one go.



A serial link has to send data sequentially and package it properly as well.

St 0 1 2 3 4 5 6 P Sp

0 0 0 0 0 0 0 0 0

Sp = Stop P = Parity St = Start

The XON protocol is simple enough to understand. All it means is that the serial device to which you're sending information and the PCW will work things out between them. The PCW won't send any information unless the serial device says that it's ready to receive it. This is clearly a good idea. Let's assume that the printer communicates at 1200 baud. Then the command to send printer output to a serial printer via an interface would be:

```
DEVICE LST:=SIO [XON,1200]
```

As you can see using DEVICE to re-allocate physical devices to logical devices is perfectly straightforward but it's probably worth going a bit deeper into the way the Centronics RS232 interface works.

The utility specifically designed to set up the interface on the PCW is SETSIO.COM, one of those programs that has a nasty tendency to strike fear into the average user's heart.

## Physical devices

There are differences in the physical devices between the 9512 and the 8000 series machines. The DEVICE program will only respond to the physical devices it knows about, and these are dependent on the implementation (which means it has to be decided for each different kind of CP/M machine made).

### CRT

This is the keyboard and the monitor; depending on which logical device is assigned to it, data is either read from it or sent to it.

### LPT

This is the printer; in the case of the PCWs it is always the built-in printer. On other CP/M systems it can be any listing device.

### PAR

This is the built-in Centronics port (on the 9512 only). This was a proprietary parallel interface designed by the Centronics printer company and now universally-used for parallel type printers.

### CEN

On the PCWs this is the Centronics port on the RS232/Centronics interface that attaches to the expansion bus at the back.

### SIO

This is the RS232 serial port on the same interface.

### NUL

Just to confuse matters completely this is an entirely imaginary physical device. Anything sent to it from any logical device is simply thrown away.

### M/device

#### Physical Devices:

```
I=Input, O=Output, S=Serial, X=Xon-Xoff
CRT NONE IO LPT NONE O PAR NONE O SIO 9600 IOS
CEN NONE O
```

#### Current Assignments:

```
CONIN: = CRT
CONOUT: = CRT
AUXIN: = SIO
AUXOUT: = SIO
LST: = LPT
```

Enter new assignment or hit RETURN

To discover the current logical to physical assignments just type DEVICE with no parameters. Couldn't be more easy.

### M/device lst:=cen

#### Physical Devices:

```
I=Input, O=Output, S=Serial, X=Xon-Xoff
CRT NONE IO LPT NONE O PAR NONE O SIO 9600 IOS
CEN NONE O
```

#### Current Assignments:

```
CONIN: = CRT
CONOUT: = CRT
AUXIN: = SIO
AUXOUT: = SIO
LST: = CEN
```

To set an assignment - like sending printer output via the interface - type DEVICE [LOGICAL DEVICE]=[PHYSICAL DEVICE]

```
M)setsio
9600 Bits 8 Stop 1 Parity none Xon off Handshake on Interrupt off
```

```
M)setsio 1200 bits 7 parity even xon on
1200 Bits 7 Stop 1 Parity even Xon on Handshake on Interrupt off
```

M)

Like DEVICE the utility SETSIO can either show you the current settings or alter them using the parameters you provide.

When working with modems or other serial devices – and especially if you're sending data between two computers using the RS232 port – it can happen that you need to set the interface to work differently from the defaults.

To explain what's going on when you use SETSIO, it's best to look at how serial links work. Unlike a parallel link (Centronics for example) which sends an entire byte at a time, a serial link sends only one bit at a time.

So that the receiving end knows what it's actually receiving, the bits have to be paralled up. The other problem is checking that the right bits have arrived. Serial links work over longer lines but there is also more risk of corruption so a simple error check can be included.

The items that can be set by SETSIO are the transmitting and receiving speeds (TX and RX), the number of data bits (5,6,7 or 8), the number of stop bits ('1 or 2), parity (odd, even or none), handshaking (on or off) and XON (on or off).

If you're using XON protocols then you must be sending ASCII data using seven bit words. This is because XON uses the control characters Control-Q (17) and Control-S (19) which are sent with the data. If you were sending binary code these numbers could easily appear with the data stream.

If you're sending binary code between two computers (using eight data bits) then you probably need Handshaking ON. This is a separate signal that goes via different wires from those used by the data.

Parity is an interesting idea. How it works is that one of the bits sent is used as a checksum. If all the data bits set are counted there will be either an odd or even number of them. If parity is set to even then the parity bit will be set if the data bits add up to an even number and vice versa.

SETSIO is a PCW specific utility, other CP/M systems will have their own purpose written utilities to do the job. This is always the case since the way serial ports are implemented depends on the computer manufacturer and has little to do with CP/M itself.

However, it is important to know how to set the PCW up properly if you hope to persuade it to talk to a serial device. Remember, CP/M only knows about logical devices, which is where we came in.

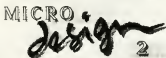
### Put it there

The PUT utility is another one that can come in handy for altering the way the PCW works. Run PUT and it asks you for a file name. All screen output from the next program you run is then sent to this file until the program terminates, at which point the file is closed. The resulting file is pure ASCII and can be merged into any word processor document – this is handy when using spreadsheets like SuperCalc.

# PUBLISH AND BE DAMNED - pleased

There has never been a better time to invest in a Page Processor

IF ONE PICTURE IS WORTH A THOUSAND WORDS  
THINK WHAT YOU CAN SAY WITH



Read what the Reviewers have to say  
"New lease of Life for the PCW"

**THE MANUAL** "Is clear, concise and refrains from using terms which might confuse the first time user." "Comprehensive, immensely friendly and will lead you where you want to go." "An excellent manual...which contains a clear and well set-out tutorial guide, as well as a full reference section."

**USE** "It takes about an hour or so to get on speaking terms with MicroDesign." "The most un-artistic user should be able to produce basic illustrations." "MicroDesign has been created with the end user in mind." "The program is meant for grassroots users."

**FEATURES** "It does everything you are likely to need in designing and laying out your artwork." "With normal typing skills any document can be made to look attractive." "An important feature of the program is auto-flow around graphics... the text you enter will automatically flow around the picture." "The impressive way (it) copes with text." "There's speed like you wouldn't believe possible from the PCW." "Very fast - puts rivals to shame." "They have thought of everything."

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We have researched budget printers for you and STAR is the outright winner with Panasonic the only close contender. We rejected Amstrad, Brother, Citizen, Epson (reliability) and NEC (jamming). The STAR LC-10 was voted 'Best Dot Matrix Printer' by What Micro and 8000 Plus. The Star LC24-10 was chosen by the PC Independent Users Club and PC Plus.

- ★ STAR LC-10 Multifont 9 pin 144cps draft, 36cps NLQ (£135+) = £155.25
  - ★ STAR LC-10 Colour (7 colours including black) 144cps/36cps Fully compatible with MicroDesign II (£173+) = £198.95
  - ★ STAR LC24-10 Superb 24 pin 170cps/57cps LQ (£197+) = £226.55
  - ★ STAR LC24-15 takes A3 landscape, 200cps draft, 67cps LQ (£330+) = £379.50
- NO printer cables required. 8256/8512 owners will require an interface and will usually require Locoscript 2. All PCWs will require Printer Drivers to run Locoscript 2 (Booklet available on request). Please note that Panasonic's otherwise excellent KX-11124 requires the extra 32K RAM Card Text Buffer for even part compatibility with Locoscript 2.

## PERIPHERALS AND ACCESSORIES

**PRINTER CABLES.** Top Quality PCW9512 to Star etc (Centronics) £7.95  
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**Extension cables.** 8256/8512 1 metre, 9512 2 metres £11.95

**RIBBONS** (including VAT, P&P) LC-10 £4.60, 5+ £4.30  
LC-10 colour £6.90, 5+ £6.20, LC-10C also takes black ribbon for economy: LC24-10/LC24-15 £5.75, 5+ £5.25

**Auto Load Cut Sheet Feeder** LC-10, LC-10C, LC24-10 (£60+) = £69.00  
**BBD Dust Covers** (including VAT, P&P) 8256/8512 (grey 3pc) £11.45;  
8512 (ivory) £13.45, Star LC-10, LC-10 Colour, LC24-10, LC24-15, £5.50 (state grey or ivory)

**INTERFACES** Parallel serial for PCW8256/8512 printer etc connection  
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**AMX MOUSE** includes interface with through connector.  
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**PRINTING** "The print quality, even from the PCW printer, knocks spots off the competition." "Output is extraordinarily good"... "found it hard to believe. The quality was far in excess of my hopes..." "the high graphics resolution produces higher quality text even from the standard printer." "...extremely high resolution printouts which set the software apart from its competition".

**STOP PRESS** "MicroDesign II takes over where Stop Press leaves off. There is no chance of Stop Press being upgraded to compete with MicroDesign II now and there would be little point there is just too much ground to make up...it would make little sense to choose Stop Press. MicroDesign II would win out for the printer support alone".

**THE ACCOLADES** "They have introduced a desktop publishing program which surpasses anything else... the last word in the development of text and graphics manipulation for the ubiquitous PCW" "Does almost everything better." "This beats the lot." "The results are superb." "Brilliant and sophisticated." "Beats the opposition hands down." "The Rolls Royce of PCW desk-top publishing."

**QUOTATIONS FROM:** The Guardian; 8000 Plus; Amstrad PCW; Micro Computer Mart; N.C.E.

## TYPESETTING ★ TEXT EDITING ★ PAGE LAYOUT ★ GRAPHICS ★ FONT DESIGN ★ PRINTING

Runs on the PCW8256, PCW 8512 and the PCW9512. Fully compatible with files from Locoscript 2, Protax, Wordstar, AMX Stop Press, The Desktop Publisher, Mini-Office Professional, Rombo Vidi Digitiser, Master Scan and other PCW software packages.

Gives high quality printed output using the PCW 8256/8512 dot matrix printer. Speed and quality are improved with an external 9 pin printer. Highest quality and speed are achieved using 24 pin, or laser printer. MicroDesign II also supports the Star LC-10C Colour Printer. Supports both the AMX and Kempton mouse systems.

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### PCW DRIVES

3" Brand New AMSTRAD/PANASONIC internal fitting 1mb (720K formatted) drives using CF2 discs, with simple instructions for DIY. Just 'Plug in & Go' NB BEWARE of secondhand drives offered as new at lower prices.

★ FD4 second drive for PCW 8256 and PCW 9512 (£107.87 +) = £124

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(+CharKit)	Locospell.....£17.95
24 Pin Printer Drivers	LocoScript 2 + LocoSpell.....£22.50
LocoFont Set 1	LocoMail.....£27.50
LocoFont Set 2	LocoFile.....£23.95

For the PCW 9512

Printer Drivers Disc	24 Pin Printer Drivers.....£22.95
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For all PCWs: LocoFont 24 Text £23.50, LocoFont 24 Display £23.50

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# THREE'S COMPANY

Pep up your PCW by adding an additional 5 1/4 inch drive.

John Hellis shows you how



Yes, even an 8512 PCW can now have a 5 1/4 inch disc drive.

When my collection of 3 inch discs reached the fifty mark I decided it was time to look for an alternative drive for my 8512. I did not want to lose my 3 inch B: drive so I made enquiries about adding a C drive. I would have liked a hard disc but couldn't afford a second mortgage. Then someone suggested KDS, a firm advertising a 5 1/4 inch drive as a switchable option for the PCW. Because the discs for this type of drive are far cheaper to buy it seemed just the thing for me.

In order to cut down on the number of discs, I had recklessly decided not to keep backup copies of my data. This resulted in the loss of some letters on

one disc and one and a half year's worth of accounts on another. The work involved in re-entering the accounts alone would nearly pay for the new drive.

The drive I purchased is a standard low 80 track, double sided, 5 1/4 inch drive. The only difference between it and others available was the 3 inch to 5 1/4 inch selector switch. This is located on the front just beneath the disc slot rather than the rear. The only problem with this is the fact that the switching functions are not marked.

Leading from the back are two cables: the first is the mains supply. This is essential as the PCW power supply is not able to handle much in the way of external devices. The second is the familiar grey ribbon cable, similar to the printer cable on the PCW, the difference being that the new one has male and female connectors/sockets fitted at each end.

## Instructions supplied

The instructions supplied with the unit are very clear and simple. Firstly, an area must be cleared on a suitable flat surface. Using a thick piece of cloth to protect the screen of the PCW place the machine face down and remove the four screws holding the case together. Amstrad have thoughtfully indicated the screws with small arrows. Gently lever the case apart.

Now comes the tricky part. You must identify the ribbon cable which runs from the main computer board to the lower drive. Disconnect this from that drive. Re-connect it to the cable from the 5 1/4 inch drive. Now fit the second connector on this cable to the internal drive. Carefully re-assemble the case and fit the screws. The ribbon cable with the external drive is short so you should take care when turning the PCW right way up.

The final thing to do is to test your upgraded system. Power up the new drive and your PCW. Make sure that the selector switch is set to 5 1/4 inch. Insert a disc into the new drive. Then put your start of day disc into the A: drive. The computer should boot as normal. The message on the screen should still show two drives fitted. If the computer does not boot or the new drive is not recognised remove the discs and switch off immediately. Check the cables and the switch and retry.

In use the drive is seen by software as the internal 3 inch one. For example, you can format discs using Diskit as normal. If you wish to copy data from the 3 inch to the 5 1/4 inch or vice versa all you have to do is use PIP, DISKIT or LOCOSCRIPT 2 as normal. Select the 'disc in B' by use of the switch on the drive. If you are going to copy data from 5 1/4 inch to 5 1/4 inch simply transfer the files to the M drive then switch over discs and transfer 'back'.

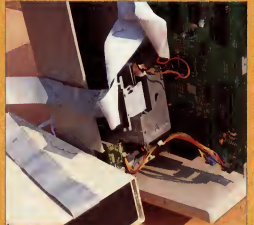
*I purchased my PCW some three years ago to maintain - among other things - a database of British pillboxes (the armoured fortifications, not the hat!) KDS Electronics, who supplied the drive featured above, can be contacted at 15 Hill Street, Hunstanton, Norfolk PE36 5BS on 0485 32076.*



The first thing you will need is a 5 1/4 inch disc drive. The drive itself is quite standard but the cables and switches aren't so easy to find off the shelf.



You need to carefully remove the back of the machine while resting it on a padded surface. This exposes the cables attached to the disc drive.



Attaching the third drive is a simple matter of disconnecting the original cables and fitting those provided by KDS. Now re-assemble and enjoy cheaper discs.

# PC OF THE ACTION

Ben Taylor gets a sneak preview of the much-rumoured LocoScript for the PC

## The horse's mouth

The Locomotive team are pretty excited about the opportunities of the PC market, and are determined that LocoScript PC will succeed. Here are their views at launch time:

"I'm sick and tired of hearing that the only thing wrong with LocoScript is its speed. We're going to make sure that isn't a problem with LocoScript PC." — Chris Hall, Director.

"LocoScript PC will run on anything from a single floppy drive mono screen PC1512 up to the fastest 386 model." — Howard Fisher, Marketing Manager.

"You can get a pretty good idea of how well designed a word processor is by measuring the time spent from opening the box to getting a £ sign out of your printer. Not a # or a \$, but a real, English £." — Richard Clayton, LocoScript PC Project Leader.

**H**aving established itself firmly as everybody's favourite word processor, LocoScript is going for a slice of the lucrative PC market. So what are the differences? If you know LocoScript, then essentially you know LocoScript PC. Locomotive have made a conscious effort to preserve the familiar editing environment, and the biggest change will be in the Disc Manager Screen. Because most PCs have large hard discs, they have a more complex directory and subdirectory structure for organising files, and Locomotive are still working out the best way to put this onto the screen. The PC keyboard, unfortunately, isn't designed with LocoScript in mind, so there are none of those nicely labelled [EOL], [PARA] and [PAGE] keys, but with the aid of some sticky keypad labels the cunning DIY-er could easily make an IBM keyboard pass muster.

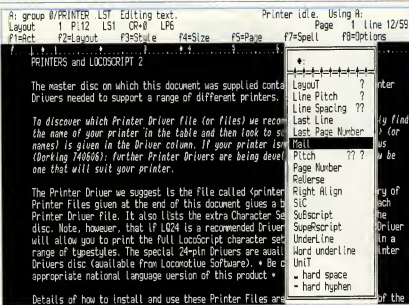
The two biggest questions that PCW users will want to ask of LocoScript PC are, "Can files be exchanged between PCs and PCWs?" and, "How fast is it?" Well, LocoScript PC will read LocoScript 2 files from a PCW, but because of the extra features on the PC the files cannot be taken back to a PCW. The biggest problem is that no PC can read 3" PCW discs, so transferring the files is going to be tricky if you plan to take documents to and fro between your PCW at home and PC at work. Locomotive are planning to provide some help in this file transfer process.

As to speed, even a basic PC runs three times as fast as a PCW just by the nature of the hardware, so there'll be a significant increase in performance. In addition to this, Locomotive are building

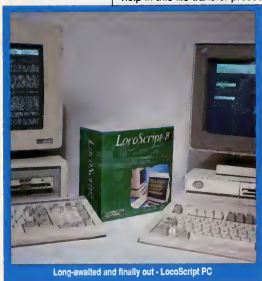
in all manner of tricks to enhance things even further — they have discovered, for example, that they could double the speed by the simple expedient of moving the display two lines at a time rather than one when scrolling through a paragraph. Cut and Paste block operations are also going to be turbocharged by making the text appear on the screen in one fell swoop, rather than gently rolling on character by character.

On the printing front, LocoScript PC will support almost any printer, including the Epson GQ5000 laser printer. The full range of foreign characters and accents will be there of course, but if even Ancient Greek to Serbo-Croat isn't good enough for you, then the LocoChar character set definition features have been extended. You will be able to set up any number of 'alphabets' of 128 user-defined characters with 32 accents each.

A particularly nice improvement over LocoScript 2 PCW is that different typesfaces can be mixed in one document, even using different LocoSpell dictionaries for any paragraphs in foreign languages!



With the benefit of a Hercules graphics card, LocoScript PC will be able to display true WYSIWYG text — italics, bold, superscripts and all. LocoScript PC can also support the PC's curious 45-line screen mode.



Long-awaited and finally out - LocoScript PC

## That package in full

Finally for the sordid details like price, LocoScript PCW will be on sale from 1st February, and will include LocoChar, LocoMail, LocoSpell and LocoFile as PCW owners know them, plus a goodly selection of printer drivers and typesfaces. Add to that a massive set of manuals (including the intriguing concept of an 'official independent guide') and you get to £125, or £99 if you already own LocoScript 2 on the PCW (all prices plus VAT). Not cheap by PCW standards, but very reasonable in the world of PC word processors.

And will the new features of LocoScript PC migrate back to a 'LocoScript 3' on the PCW? "Some aspects of LocoScript PC rely on features of the PC that the PCW doesn't have, so not everything could be ported back," says Howard Fisher. "But we definitely see the PCW as our main market for at least the next two years — our PCW software sales are actually increasing at the moment — and we are of course planning to develop LocoScript further on the PCW." Good news indeed for everyone.

# Add style to your PCW – with LocoFont

LocoFont gives you a range of typestyles to use on your PCW's built in matrix printer. With LocoFont you can match your typestyle to your mood – Roman for an important letter to the bank manager, Script or Penman for more personal correspondence...

There are 14 typestyles to choose from – 10 in Set 1 and 4 specialist fonts in Set 2.

**Set 1 £19.95**

Please find enclosed confirmation of your order for an additional 50 brass fittings with screw threads. But note...  
Standard  
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

Taking as our hypothesis  $VQ:0\pm2) \approx 0$   
the argument gives the result  $f, \Sigma 02, = 0$   
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

You are invited to Ted's housewarming party. The new house is supposed to be finished on the 27th June, ...  
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

We're glad to hear that you enjoyed the little "surprise" party that we organised for you on your birthday. I'm sorry that I...  
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

Avocado Pear £2.95  
Seafood Cocktail £2.50  
Cucumber Soup £1.95  
Fresh Mussels £4.50  
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

Word Processor: Used to describe a computer together with special software or simply to describe the software. A word processor provides a facility to create and modify documents on a screen before ...  
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

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abcde ABCDE 12345

**Set 2 £14.95**

The software contained in this package is supplied to you on the terms and conditions indicated below. The opening of this package indicates your acceptance of these terms and conditions. If such abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

It seems ages since I last wrote to you – and even longer since we last met. Now that I've got more time why don't we meet up in London one day soon. Ix a ...  
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

**Both sets together SAVE £5**

Please send me the following:

FOR THE AMSTRAD PCW 8256/8512

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LocoFont Set 2\* £14.95 ☐

LocoFont Set 1 & 2\* £29.90 ☐

LocoScript 2 & LocoSpell £34.90 ☐

LocoScript 2 £24.95 ☐

Postcode \_\_\_\_\_

☐ I enclose a cheque for TOTAL £ \_\_\_\_\_

☐ Please charge my Access/Visa card \_\_\_\_\_ EXP Date \_\_\_\_\_

Signed \_\_\_\_\_

Send to Katy Buchan at:

**LOCOMOTIVE SOFTWARE**  
Allen Court, Dorking, Surrey, RH4 1YL

TEL 0306 740606

\* For LocoScript 2

Note: All prices include VAT and UK postage

**LocoFont**

For LocoScript 2  
On the PCW8256/8512

**Capitals**

FOR SALE: MINI 1000 – Good  
LITTLE RUNNER, NEEDS A LITTLE  
WORK. TAX AND MOT UNTIL AUGUST.  
NEW SUBFRAME AND BRAKES. OFFERS  
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

**Roman**

The minutes of the previous meeting were accepted as correct. There were five matters arising which were ...  
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

**Definite**

We have been forced to adopt a tougher approach to returns of faulty product. No returns will be accepted without prior ...  
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

**Finesse**

The Residents Association  
« Annual Fête »  
The fête this year will be held on the 10th June at 2.30 pm  
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

**Modern**

After disconnecting the mains power, unscrew the three screws marked 'x' and remove the cover slowly. Be very careful not to ...  
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

**Mini 1517**

The software contained in this package is supplied to you on the terms and conditions indicated below. The opening of this package indicates your acceptance of these terms and conditions. If such abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf

**Penman**

It seems ages since I last wrote to you – and even longer since we last met. Now that I've got more time why don't we meet up in London one day soon. Ix a ...  
abcde ABCDE aBcDe ABcDE aBcrr  
ABBT 12345 eGdIA \*\*\*\* Vdijf



# HARD ACT

The Copyright, Designs and Patents Act looks set to take us

**I**n an information-driven and entertainment-seeking society like ours, copyright has the potential to affect us at almost any stage of our waking lives – whether we're reading a book, listening to music, watching the television, or more recently, tapping away at the keyboard of a computer.

Through publication of their works, writers, musicians and, in the latter case, programmers, can disseminate knowledge and enjoyment to the rest of the world. Copyright is a legislative device that protects and rewards these authors while allowing the public to enjoy the fruits of such learning at a price it can afford.

Parliament's 1956 Copyright Act set out to protect all kinds of intellectual property that had been committed to a tangible format (the manuscripts of a novel or song, for example) from the type of free and easy exploitation that the development of more sophisticated reproductive technology – like photocopiers – was to herald. We say 'tangible format' because copyright doesn't in fact come into power until an idea has been translated into a form that others can see.

The effect of the Act was to ensure that all original authors of intellectual property could instantaneously claim the copyright on that work as soon as their idea had been committed to a visible format. Now, as copyright owners, they were the only people who could legally grant permission for their works to be reproduced by others. In the years that were to follow, however, it became clear that the Act was leaving the copyright rights of many modern authors – especially of software and information held only on electronic media – in some doubt.

## Updates and amendments

The 1988 Copyright, Designs and Patents Act, however,

which came into force on the 1st of August this year, effectively clarified their position. It represented a kind of 'once and for all' modernisation of the '56 Act to include all those information-based processing systems that were only being whispered about thirty-odd years ago but which are nowadays in widespread use.

The 1985 Copyright (Computer Software) Amendment Act had already gone part of the way when it stated that copyright existed as soon as a program had been translated into a 'retrievable' format. In other words, if a computer program was typed straight into the machine from the computer keyboard – without being first committed to paper – it was entitled to copyright protection.

The Copyright, Designs and Patents Act encompassed and overtook this Act: for the first time, computer software was to be considered 'intellectual property' and, as such, was entitled to the same copyright privileges as any literary work.

So what repercussions does this Act have on the ordinary, unassuming PCW user? The truth of the matter is that he or she might well be in for a rude awakening.

As many of you are aware, a program in the throes of creation can include a number of building blocks or sequential programming sections that have already been incorporated into earlier, established programs. These sections may have been written by yourself or other people. If, as in the first case, you own the original copyright to these 'building blocks', then there shouldn't necessarily be any complications. If, on the other hand, you are incorporating someone else's 'building blocks' into the program you're writing, then the law states that you should formally ask their permission to reproduce them in your program, even if you're using them in a completely different context to the original copyright authors.

## Almost identical clones

The program that you eventually end up with will bear your copyright; even though there are fragments of other peoples' work in it, you have arranged them in a new and individualistic way to provide your finished work. But – and it's a big 'but' – if you then want to go on and make a copy of that program, you will again have to ask all the original copyright holders for their permission.

IBM, for example, own the copyright on the PC ROM BIOS code. Companies bent on producing a PC clone came up against a major stumbling-block: how to come up with a BIOS for their new clone ROM without infringing the original IBM copyright.

Two groups of programmers, neither of which had anything to do with the original PC model, were relegated to two different rooms, their only direct means of communication being the adjudicating lawyers. The first group was responsible for taking the ROMs apart and working out exactly what they did, though (importantly) not how they did it. Their findings were then communicated – by means of a third party – to the second group who set about building code for a ROM that would do exactly what their counterparts had just specified the original was capable of doing.

But because they were ignorant of the original code,

## Forever Young

While The Copyright, Designs and Patents Act was making its slow, laborious passage through Parliament, the copyright on Sir James Matthew Barrie's Peter Pan expired. The original copyright benefit had been left to Great Ormond Street Hospital for Sick Children, and, in a fit of philanthropy, Parliament decided to grant the work a perpetual copyright so that all royalty proceeds continue to be donated to the Hospital indefinitely.

## Giving it up

As soon as any idea is committed to a tangible storage medium, a copyright is called into existence. Usually the copyright owner is the creator of the work in question, although it is possible to relinquish a copyright to either another individual or an organisation.

Let's take as an example the case of a magazine editor who commissions an article from a freelance writer. Once the commissioned article has been paid for, the copyright on the submitted article usually becomes the magazine's and the magazine can do whatever it likes with it. It is strongly recommended that both parties draw up a written agreement to this effect at the time of the transaction to save themselves any future misunderstanding.

The situation is, however, often different in the case of an unsolicited submission that the editor consequently decides to publish in the magazine. Often the author reserves the copyright on the article and could have it published elsewhere if he or she wanted to.

Intellectual property can be bought and sold just like any other kind. It has been known for authors to give up (or assign) the copyright on their work to their publishers. Again, it's better to have a contract arranged which states that both parties intend to do as much, because once the copyright has been assigned, the author relinquishes any rights that he had to his own work.

So how long does copyright last? Copyright on most kinds of work (literature, music and pictures) expires at the end of the calendar year that marks the 50th anniversary of the death of the creator. If a work has got more than one author (for example, a lyricist and a composer get together to create a song), then it will also have more than one copyright – one on the words and one on the music – which will subsist independently of one another until fifty years have passed since the death of either one.

Where a copyright on a work is owned by more than one person, you would have to secure the permission of all parties concerned before you reproduced the work in any shape or form.

# TO FOLLOW

well into the next century. Sharon Bradley cuts the red tape.

they could in no way be accused of infringing the original IBM copyright – even if the ROMS shared some code sequences – because the new code had been perfected and arrived at independently.

## Proving ownership

Under the Universal Copyright Convention, any work bearing copyright protection must display the C sign along with the name of the copyright owner and the year of publication. But because this sign still isn't in widespread use for one reason or another, it's not surprising that many authors become anxious at the thought of having to officially prove copyright ownership. There are, however, a number of ploys that you can adopt which will provide any court of law with incontrovertible evidence that your intellectual property was actually in existence on a given date.

Say you've just written a computer program. You really don't want anyone else to steal your idea. One of the simplest courses of action you can take is to save it to a disc, put the disc in an envelope and send it to yourself by registered post. It might be a good idea to mark the envelope in some way so that you know what's in it when it arrives on your doormat; it becomes worthless once you open it.

The postmark on the envelope will prove that your program was in existence on that date, so don't open it until you have to – if ever – in a court of law. To keep the envelope doubly safe, you could also deposit it in your bank and hold on to the receipt. The same procedure can apply to your latest novel or photograph.

## Double trouble

Duplicating cassette- or disc-bound computer programs is easy. It can also be illegal. If you need to make a copy of a commercial program in your possession – even if it's to keep a back-up – you must first write to the program's publishers and ask their permission, long-winded though it may sound. The only time you don't need to ask for specific permission to make a copy is if the software is accompanied by a statement saying that backup copies are, in fact, allowed.

Some suppliers of business software will restrict the client to using the software in question on one machine alone. For a company wishing to network their machines it can be an expensive business, involving buying as many packages as there are machines to run them. A site licence, on the other hand, allows the prospective purchaser to have one program installed on a number of machines – just so long as they are all situated at the one site.

Following the widespread introduction of microcomputers in schools, many teachers argued that keeping at least one back-up copy of each master disc they used on a regular basis could only be described as foolhardy in the extreme.

Some educational software companies have responded to this by making duplicate copies of their educational programs available to the teachers. Others even offer to sell secondary duplicate copies of their software at a much lower price – the best solution all round! If you're a teacher

and unsure as to whether the software you're using at school can be copied, don't hesitate to phone the publisher in question and find out. It is, as they say, better to be safe than sorry.

So how long does copyright last on a computer program? As is the case with films, video and audio tapes, records and discs, the copyright on computer programs lasts until the end of the calendar year marking the fiftieth anniversary of the date of publication. More and more now, publishers are printing a P (for published) on software packaging followed by the year. It will therefore become much easier for future users to know exactly when the copyright is due to expire.

One of the main drawbacks of the Copyright, Designs and Patents Act, and indeed of the Copyright Act before it, is the virtual impossibility of policing it properly. Making an illegal copy of your favourite computer game, in the certain knowledge of saving yourself twenty-odd quid, is an activity that is more likely to occur in your home or office than in public and therefore very difficult for anyone else outside it to prove.

As far as commercial piracy prevention is concerned, the ball would appear to be bouncing firmly in the court of the software houses, who are, after all, the ones who stand to lose the most from it; it's up to them to incorporate anti-theft devices into their programs. This is relatively simple with computer games but not quite so easy with business software. Companies don't like to rely on a single disc to get the software they rely on up and running each day.

This much is clear: unless copyright legislation governing the use of software can come to rest on something more substantial than an individual's conscience, its overall effectiveness has got to be considered doubtful in the extreme.

## Character Reference

Even though a fictitious work is subject to all the usual copyright protection, the characters within it are not. Perhaps you wanted to write a story which placed Bilbo Baggins in an entirely new and original setting; you would not be infringing Tolkien's original copyright providing that the hobbit's character was all that your story had in common with the original work.

## Act of contrition

Infringements of copyright tend to be viewed in two very distinct lights depending on which side of the fence you happen to be on. You may not be able to see anything wrong with 'borrowing' a friend's version of *LocoScript*; after all, he's told you that he's seriously impressed with it and uses nothing else. Perhaps you should give it a go too? All right, so you won't have a manual showing you how to use it properly, but he'll be able to get help somewhere, and – perhaps most convincingly of all – who's going to know about it anyway?

Wrong. Large-scale illegal copying, or software piracy as it's come to be known, has been estimated to cost the software publishing industry not just thousands, but millions of pounds a year. With companies having to recuperate huge losses like that each year, it's inevitable that the people who put the work into the development and ultimate success of a program are the ones who suffer. Good software costs a lot of time and money to develop, no one would do it if they can't make a living from the process.

There's also this to consider: people who buy illegally copied programs (or copy them themselves) are losing out at the end of the day as well. Try getting the full use out of a package if you haven't got a manual telling you how it all works and what features are available. You get no support from the company, no updates and no redress if it causes you problems.

Some software publishing houses are now producing cassettes or discs in such a way that it is impossible to duplicate them. Signals are built into the original program which, during the copying process, 'paralyse' some of the duplicate's computer commands. If the program that you've just bought doesn't work properly, it is possible that you've been sold a pirate copy. Your best bet is to take it back to the supplier and investigate. Either change it for the real thing or report what's happened to your local Trading Standards Department.

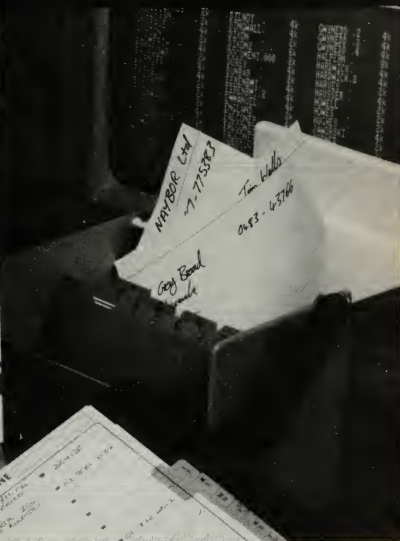
Come and see us at  
The Computer Shopper Show  
Alexandra Palace - 24-26 Nov, stand K1

**What?**  
**could be**  
**Easier •**



# LocoFile

*The computerised address book for  
your PCW that's easy to search,  
easy to look up, easy to keep  
in order and produces labels  
automatically.*



## WHAT THE PRESS SAY:

... At any point while working all your records are available instantly and the information from within them can be included in your LocoScript documents ...

**Kay Ewbank**

Amstrad PCW Magazine, April 1989

... LocoFile's principal asset, apart from being ridiculously easy to use, is the close collaboration with LocoScript ...

**Christina Erskine**

Computer Shopper, March 1989

... It's difficult to think of any LocoScripters who wouldn't find LocoFile useful...

**Rob Ainslie**

8000 Plus, November 1989

**LOCOFILE COSTS JUST £29.95. TO PLACE AN ORDER OR FOR MORE INFORMATION, CONTACT LOCOMOTIVE SOFTWARE**



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SOFTWARE**  
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Surrey, RH4 1YL  
(0306) 740606

# TOTAL CONTROL

Once you use this public domain program you'll wonder how you ever got along without Newsweep

## Out and about

The (discontinued) 8000 Plus subscribers disc had a very good version of NSWP on, so if you know someone who subscribed in the early part of 1989 ask them for a copy. It came complete with the original author's documentation.

You can get NSWP.COM (as well as thousands of other CP/M programs) from the CP/M User Group, contact Diana Fordered at 72 Mill Lane, Hawley, Dorset, Kent, DA2 7RZ. And don't forget the PCW File PD library, Contact Dave Axford on 0428 56438.

If you've ever cursed the multiplicity of utility programs needed to cope with your many files and discs then you've also probably put together a wish list, a list of all those file operations you wish you had just one program to do. You'd probably require it to be fast enough to replace command line operations and yet small enough to fit on just about every disc you've got so that it's always available. You'd want it to be totally reliable and wouldn't it be nice if it was also free?

The program you need exists, and it's called Newsweep. You'll find it listed in public domain libraries as NSWP.COM. Tailored versions for the PCW abound and though they may sometimes have slightly different filenames they're all the same program.

So what is NSWP and what makes it so wonderful? Well it's a kind of program known as a shell. The idea of a shell program is that it surrounds the nasty bits of the command line with something pretty – hence shell. There are other programs in the public domain to do the same thing (including, strangely enough, one called SHELL.COM).

When NSWP is first invoked it quickly reads the current

disc directory and presents on screen an alphabetically sorted list of the files on the disc – including system files which would normally be hidden. Any attributes the file might have are shown by highlighting the letters of the filetype.

Unlike the DIR command NSWP goes much further and by the side of each file you will find its size in kilobytes. As a last service not only are the total number of files on the disk (together with the space they take up) noted at the top of the list but the free space remaining on the disk is shown too.

## Specifications

NSWP can also be invoked with parameters, so you can specify which disc you want logged on and can even log onto every user group at once. To do this while calling NSWP from the a drive for example you might type:

**NSWP B:.\*.let**

which will give you a list of all files with the LET filetype in all user groups on the disc. As you can see from this example NSWP is the ideal utility for dealing with all those Locoscript discs as well.

To start with the first file on the list is the only one displayed and this is the currently selected file. Tapping the [RETURN] key cycles you through the file list one at a time – they scroll up the screen – while holding down the space bar whizzes you through them at high speed. Once past the end of the list the cycle begins again.

While you are in NSWP there are a total of twenty different one key commands you can call on, most of which are fairly obvious as you can see from the screenshot of the list (called up with the question mark). Two of the commonly used commands are B to scroll backward through the list and F to go straight to a particular file.

## Fast forward

When a disc might contain dozens or even hundreds of files it's nice to be able to find the one you want – fast. NSWP accepts wild cards in filenames for the find function, F, delivering you straight to the one you require, or fairly close to it in the list. For example, to find a letter sent in March to Acme Software the command:

```
NSWEEP - Version 2.07 07/17/1984
(c) Dave Rand, 1983, 1984
Edmonton, Alberta
```

```
A - Retag files
B - Back one file
C - Copy file
D - Delete file
E - Erase F/D files
F - Find file
G - Log new disk/user
H - Make file copy
I - Print file
J - Exit to CP/M
K - Squeeze/Unsqueeze tagged files
L - Rename file(s)
M - Check remaining space
N - Tag file for mass
O - Untag file
P - Use file
Q - Wildcard tag of files
R - Set file status
S - Display this help
T - Forward one file
```

```
127K in 29 files, 46K free.
Tagged files = 0K ( 0K).
```

```
3. A1: DOCUMENT.FG 4K
4. A0: J20LOCD.FG 44K
5. A1: LAYOUT.FG 1K
6. A3: LETSPACE.HDP 2K
7. A3: LETSPACE.PLP 2K
8. A3: LETTER.HDP 1K
9. A3: LETTER.PLP 1K
10. A0: LETTERS.CRP 0K
11. A0: MAILINGS.COM 4K
12. A3: MANUSC.RP 2K
13. A0: MATRIX.SND 7K
14. A3: MEMO 2K
```

When NSWP is called it begins by logging onto either the current disc or one that you have specified. It's possible to specify a disc drive alone, a particular user group or all user groups. You can also use a wildcard pattern. For example, \*LET to show only files with the LET filetype.

```
4. A3: ADDRESS.LST 2K : x
M:nsup a*
```

```
NSWEEP - Version 2.07 07/17/1984
(c) Dave Rand, 1983, 1984
Edmonton, Alberta
```

```
Drive A: 99999999.999 556K in 79 files, 150K free.
```

```
1. A1: ADDRESS.LST 2K
2. A3: ADDRESS.LST 2K
3. A3: ADDRESS.LST 2K
4. A3: ADDRESS.LST 2K
5. A1: ADDRESS.LST 2K r New name, or *? add1.lst
6. A3: ADDRESS.LST 2K Tagged files = 2K ( 2K).
7. A1: ADDRESS.LST 2K Tagged files = 4K ( 4K).
8. A2: ADDRESSES.MB 2K Tagged files = 6K ( 6K).
9. A2: COVER 4K Tagged files = 10K ( 10K).
10. A0: DISCHN.JJV 30K m
11. A1: DISCINFO. 0K
12. A0: DISCHN.JJV 30K m
Copy to drive/user? m
```

```
Copying --> A3: ADDRESS.LST to M9:
Copying --> A0: ADDRESSES.MB to M0:
Copying --> A2: COVER to M2:
Copying --> A1: DISCINFO. to M1:
12. A0: DISCHN.JJV 30K
```

Copying files is made very easy indeed with NSWP. Not only can you see the names of the files on the disc in alphabetical order but you can select those you wish to copy and tag them with just a single keystroke. Contrast this with the use of PIP to achieve the same results.

## FM???AC'.LET

will put you on the first letter for March to the company represented by AC. Even more impressive a partial filename will do something very similar. To find the file NEWTEST.ASM you need search for either N, which will take you to the first file beginning with N or NE which will probably find the file immediately.

Once you've found the file there are a number of things you can do with it. You can view it, delete it, copy it, change the name or do even more esoteric things to it. For example NSWP makes it a simple process to set and unset the various file attributes — using the Y option on tagged files. It can also compress your files for greater storage efficiency.

The last two functions demonstrate one of NSWP's most powerful features, the ability to do the same thing to a whole range of files by tagging them first. To tag a file simply press T when you reach it in the list. As you tag files a running total of the file sizes is displayed. When you go around again each tagged file is shown by an asterisk. Untagging a file is just as easy, simply press U.

Tagged files can be copied, deleted, squeezed, unsqueezed or have their file attributes set and unset, all with no more than a few keystrokes, and all fully visible on screen. Mass deletion of files can be fully automatic or you can ask to be prompted for each one as a final check. Just to be completely sure NSWP will ask you — even on automatic deletion — if you really want to delete protected and hidden files.

This is especially useful since mass tagging of files is easiest done by simply holding down the T key and watching them fly past. You can then do a mass delete of everything that isn't protected. NSWP will warn you of anything you wanted to save.

## Sardine city

The ability to squeeze a file, sometimes by as much as 50 percent, means that expensive three inch discs can be used much more economically, especially those discs used just to back up files for security purposes. Not only will the files fit into less space but they are also virtually immune from casual perusal. Trying to make sense of a compressed text file is impossible.

## Historical note

The original SWEEP.COM can also be found in the public domain libraries. It was written entirely in small C (itself in the public domain under a number of operating systems) and underwent a number of revisions and alterations. However, it lacked many of the finer features of NSWP.

NSWP was written in assembler from the beginning and is less than half the size of SWEEP4 (the latest version we know of). It takes up only 12K of disc space. Dave Rand, who wrote most of NSWP in 1983 — 84 included support for CP/M 3 in the program, specifically multi sector read and writes. These allow the program to read and write up to 16K at a single call which greatly speeds up file handling. NSWP reads and writes from disc as fast as it can be done with legal BIOS calls.

For those who are interested in such things NSWP uses Huffman encoding to squeeze files and is compatible with the original squeeze/unsqueeze public domain utility written in small C by Richard Greenlaw. This technique can be used on any kind of file whether it be a binary file or text.

NSWP analyses a file for frequency of distribution of different valued bytes. The compressed file is written as a bit stream, with common bytes allocated less bits and only very rare ones getting all eight. A table is included with the file so that NSWP can reconstitute the original file at a later date. If the compressed file wouldn't be any smaller than the original then it isn't written.

These compressed files can quickly be unsqueezed in the same way that they are created, by tagging them and selecting the Q option. You will notice that NSWP automatically replaces the middle letter of the filetype with a Q when the file is squeezed, when it's unsqueezed again the original letter is re-instated.

Files for tagging can be selected in another, even faster, way. The W option allows you to tag files using wildcards, so \*. \* would tag everything, while GA\*.C would tag all your C language source files that began with GA.

Finally, though this article has by no means exhausted NSWP's abilities, you can also print from it with the P option before exiting to the CP/M command line with X. NSWP is the one utility that no one should ever be without.

## Bits count

NSWP allows you to set extra bits in filenames that are not used by CP/M itself.

12345678 RSA

If you think of a filename as having the bits shown above available then you can set or unset the R (read only), S (system) and A (archive) bits that are used by CP/M. For your own purposes you can use NSWP to set the bits on 1,2,3 and 4 as well. To turn off all the bits tag the file, press Y and when asked which bits you want put in a comma and press [RETURN].

## Copycat

One of the obvious uses of the mass file copy function in NSWP is to copy files for backup purposes. If you don't mind the slight loss of speed you can have the copies verified. After specifying the drive (and possibly a filename for a single copy) simply leave a space and add the letter V to the command.

```

4. M2: COVER          4K  :#
5. M1: DISCINFO.      8K  :#1 New drive/user/mask? n

NSWEEP - Version 2.07 07/17/1984
(c) Dave Rand, 1983, 1984
Edmonton, Alberta

Drive M2:?????????? 302K in 8 files. 62K free.
1. M9: ADDRESS.LST 2K :t Tagged files = 2K ( 2K).
2. M1: ADDRESS.LST 2K :t Tagged files = 4K ( 4K).
3. M0: ADDRESS.LB 2K :t Tagged files = 8K ( 8K).
4. M2: COVER 4K :y Which flags (1-4,R,S,A)? 1234rsa

```

```

Setting --> M9: ADDRESS.LST to 1 2 3 4 R/O S/VS ARC
Setting --> M1: ADDRESS.LST to 1 2 3 4 R/O S/VS ARC
Setting --> M0: ADDRESS.LB to 1 2 3 4 R/O S/VS ARC

4. M2: COVER 4K :l New drive/user/mask? n

```

```

NSWEEP - Version 2.07 07/17/1984
(c) Dave Rand, 1983, 1984
Edmonton, Alberta

Drive M2:?????????? 302K in 8 files. 62K free.
1. M9: ADDRESS.LST 2K :t
2. M1: ADDRESS.LST 2K :t
3. M0: ADDRESS.LB 2K :t
4. M2: COVER 4K :t
5. M1: DISCINFO. 8K :t

```

One of life's more irritating bugs is trying to deal with protected and hidden files using the supplied CP/M utilities. These are anything but friendly. Contrast that with the way NSWP deals with file attributes. You get an inverse character if the bit is set and setting or unsetting bits is just a keystroke away.

```

2. M1: ADDRESS.LST 2K :t Tagged files = 2K ( 2K).
3. M2: COVER 4K :t Tagged files = 4K ( 4K).
4. M2: COVER 4K :t
5. M0: ADDRESS.LB 2K :t
Erase Tagged or Untagged files (T/U)? t
Do you wish to be prompted (Y/N/A)? n
Deleting --> M1: ADDRESS.LST
Deleting --> M0: ADDRESS.LB
Deleting --> M2: COVER
2. M2: COVER 4K :l New drive/user/mask? n

```

```

NSWEEP - Version 2.07 07/17/1984
(c) Dave Rand, 1983, 1984
Edmonton, Alberta

Drive M2:?????????? 298K in 6 files. 66K free.
1. M9: ADDRESS.LST 2K :t Tagged files = 2K ( 2K).
2. M2: COVER 4K :t Tagged files = 6K ( 6K).
3. M1: DISCINFO. 8K :t Tagged files = 14K ( 12K).
4. M0: ADDRESS.LB 25K :t
5. M1: FLIPPER.LB 18K :t
6. M0: NSWP.COM 12K :t Tagged files = 26K ( 24K).

1. M9: ADDRESS.LST 2K :#
Erase Tagged or Untagged files (T/U)? t
Do you wish to be prompted (Y/N/A)? n
Deleting --> M1: ADDRESS.LST
Deleting --> M2: COVER
Deleting --> M1: DISCINFO.
Deleting --> M0: NSWP.COM
1. M1: FLIPPER.LB 256K :t

```

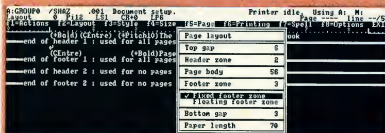
Disc management is what NSWP is all about. One of the things that has to be done is to spring clean discs (usually every month or so - don't wait a year). NSWP makes this a fast, safe process. You can delete a single file or do mass deletions of tagged files but either way NSWP checks with you first.



# ALL CHANGE!

Polished-looking printouts with the PCW?  
Sharon Bradley shows you how to  
pep up your pages

## LocoScript 2

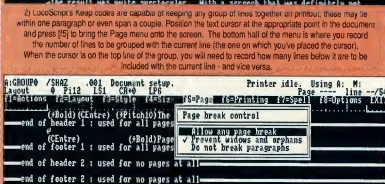


1) To set the depth of the header and footer zones, open the [15] Page menu and choose the **Page Layout** option. Entering the size of these zones also sets how many lines can be used on each page to print the document itself.

Included on the menu are the page length and the size of the gaps. Select **Fixed footer zone** and your footer text will be positioned in the same place on every page – which is probably what you will prefer anyway. The **Floating footer zone** option, on the other hand, will position the text immediately after the last line of text on the page – whenever it happens to come.



2) LocoScript 2 keeps codes are capable of keeping any group of lines together on a printout, these may be within one paragraph or even span a couple. Position the text cursor at the appropriate point in the document and press [15] to bring the Page menu onto the screen. The bottom half of the menu is where you record the number of lines to be grouped with the current line (the one on which you've placed the cursor). When the cursor is on the top line of the group, you will need to record how many lines below it are to be included with the current line – and vice versa.



3) To control your documents page breaks on a printout, select the **Page break control** option on the [15] Page menu. This submenu is another of LocoScript's Settings menus and offers you three choices: if you don't mind how your paragraphs are printed out, select **Allow any page break**. To prevent widows and orphans select the second option, and, finally, to avoid all paragraph breaks completely, tick the last option on the menu.

Getting the most out of your word processing program is important if you are in the business of producing clear, attractive, multi-page documents that will be a credit to you or your company. Previous episodes in the series have showed you how to get to grips with LocoScript's header and footer facilities, although we don't suppose for one minute that you will always be happy using them in the formats we described.

The LocoScript page is divided roughly into three zones: the header, the footer and the text zones. None of them, however, are static. This month we show you how to alter the vertical format of the page layout to suit your own text – and printing – requirements.

## LOCOSCRIPT 2

### Altering the size of header and footer zones

Changing the header and footer set-up of a document requires making alterations to the original Document Setup. To access this Settings menu, bring the 'editing mode' [F1] Actions menu up on the screen and choose **Document Setup**. Open the [15] Page menu and choose the **Page Layout** option. The resulting menu is where we record the results of a few calculations we're going to have to make to change the way the lines on the page are distributed among the three header, text and footer zones.

How many lines you allocate to these zones depends on the size of the paper you will be using. For the time being, we're going to stick with our standard A4 cut sheet stationery.

There are a number of pieces of information that have to be fed into this menu: the paper length (in terms of the number of lines that could be printed onto the paper irrespective of the gaps and zones), the number of lines required in, firstly, the header and, secondly, the footer zone, and, finally, how many lines occupy the top and bottom gap above and below the header and footer zones respectively.

All the calculations that we're going to do here are made in terms of what we call the document's base line pitch. Again, by default this is 6, which means that six lines are printed to the inch; if you decide to alter the base line pitch to 8, then you will have to recalculate accordingly.

Take a sample piece of paper. Measure its length in inches and multiply that measurement by 6 (the base line pitch). Take the nearest whole number to arrive at the page length: 70. Use this formula whenever you need to calculate overall page length, regardless of its size.

Before we start thinking about how deep we want our header and footer zones, remember the gaps that have to be left at the top and bottom of the page: an inch above the header (which will constitute 6 lines) and half an inch below the footer (3 lines).

Now for the changes. Say we want to start the first line of the header zone as soon as possible after the top gap and we want to make it 2 lines deep. The header text will begin therefore on line 7. The document text will start on line 9. Our footer zone will also be two lines deep (though we must leave three, one for the carriage return that must follow the last line of document text before a footer can be typed in). That means that the footer zone begins on line 64 leaving the desired three line space for the bottom gap. Altogether there will be 56 lines free over which the printer can reproduce the main text of the document. This last figure should already be calculated for you by the menu.

### Keeping groups of lines together

There may be groups of lines in your document, like a chemical equation or poem, that you might prefer not to be interrupted by the LocoScript 'end page here' line

which could split them across two pages. There is another handy layout feature that LocoScript can incorporate into your documents.

The key to keeping lines together like this are some special word processing codes known as Keep codes. These are inserted into the text of your document through the document editing [F5] Page menu. Before you do this, move the cursor to the appropriate passage in the document – either the first or last line of the group you would like to keep together. Bring the Page menu up onto the screen.

If you've put the cursor on the first line of a 5-line limerick, for example, you will need to enter the number 5 on the bottom line of the menu at the ?? lines below prompt. This instructs the program to keep the line on which the cursor is placed and the following four lines of the limerick together. Alternatively, enter the same number at the ?? lines above prompt.

## Controlling paragraph breaks

Just because you've hit the [P]rinter key and wandered off into the kitchen to make a cup of tea or twelve doesn't mean that you and your document are left entirely to the mercy of your printer. Apart from making the alterations we've already seen, LocoScript 2 also allows you a number of choices as far as controlling page breaks are concerned: they can, depending on your choice, happen in the middle of paragraphs or only between paragraphs. In the case of the latter decision, you can also choose whether widows and orphans are allowed. For the non-cognoscenti, widows and orphans are every published writer's nightmare; they are the names given to the single lines which are separated by a page break from the rest of the paragraph – either at the bottom or top of a page. Usually, they are to be avoided at all costs.

By default, LocoScript 2 will split paragraphs between pages. The good news is that it will also either keep back or send on at least two lines of text in a potential widows/orphans situation.

Open the same Document Set-up/[F5] Pages menu that you used to alter the headers and footers and select the **Page break control** option. You will find three choices listed, the second one of which is probably the most popular. Make your choice and press [ENTER].

## LOCOSCRIPT 1

### Altering the header and footer zones

From within Document Edit mode, open the [F7] Modes menu. Select **Edit header**, then the [F7] Options menu. Finally choose the [F7] Page Size menu.

The information needed here will be exactly the same as that required by the LocoScript 2 menu earlier on: the overall page length, the depth of the header and footer zones – and so on. As we said before, all the calculations are made according to the base line pitch which we'll leave at 6.

When altering the vertical format of your paper, it's often a good idea to take a sample sheet and mark on it the line allocation for each zone as you go along. That way, if you mistakenly enter an inconsistent value, you will be able to work out more clearly where you went wrong.

### Keeping groups of lines together

LocoScript 1, like its successor, will respect your wishes to keep certain lines together on the same page during printout.

Move the cursor to the appropriate point in the text and select the [F6] Pages menu. Choose **Keep lines together**. You will then be asked to type in the number of lines you would like to group together above and/or below the point in the text at which you've positioned the cursor.

Place the cursor on the line in which our limerick starts, call up the menu and type the number 5 on the **Below** line of the menu. Equally, you could place the cursor on the line in which the limerick ends and type 5 on the **Above** line of the menu. Press [ENTER] and you will instruct the program to place a Keep code in the text.

## Controlling paragraph breaks

Once again from Document Edit mode, open the [F7] Modes menu. Choose **Edit header** and then, immediately after, the [F7] Options menu. Instead of opening the Page Size menu, select the [F6] Breaks menu instead. This menu presents you with a simple set of either/or choices. Tick the **Prevented** option to avoid widow and orphan paragraph breaks (that is one line of a multi-line paragraph either remaining on the bottom of one page or sent to the top of the next page on its own). **Preventing Broken paragraphs** simply means that you can stop a page break from occurring in the middle of a paragraph.

**LocoScript 1**

1) To access LocoScript 1's page size parameters, open the [F7] Modes menu. Select **Edit Header** from within this menu and then the [F7] Options menu. Finally open the next [F7] menu that is available to you: the Page Size menu. As you change the line allocations of the various parameters, the page body value will alter accordingly. If your faith in your mathematical ability is a little shaky, don't worry. LocoScript will stop you from entering rubbish by throwing out one of its quaint little 'Inconsistent' error messages.

2) To keep a group of lines together, move the cursor to the appropriate point in the text and call up the Pages menu by pressing [F6]. Select the **Keep lines together** option. Unlike LocoScript 2, you can move the cursor to the first line of the group, the bottom line of the group, or place it somewhere in the middle. If, for example, you happened to place your text cursor on the second line of the five-line limerick that you want to preserve intact, you would ask for two lines above and four lines below the cursor to be grouped together (the line on which you leave the cursor is always counted twice.)

3) Access the [F6] Breaks menu from [F7] Options after selecting **Edit header** from [F7] Modes. This provides you with a set of simple either/or choices. Most probably you will allow broken paragraphs (tick **Allowed** with the [v] key) but choose to prevent widows and orphans wherever possible (tick **Prevented**).



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# STAND AND DELIVER

You read 8000 Plus for PCW support but for a wider view of the computer world Steve Patient thinks you need to see the shows



Amstrad changed their stand this year. It looked less like something from the set of *Cosé Encounters* and more like something from *Qz*. A great improvement.

Just two or three years ago, the recently held PC Show (nee Personal Computer World show) was the show to be seen at whether as an exhibitor or as a spectator. It had everything and only the biggest names in the industry dared to stay away. The show was intended to cover the whole range of activities from obscure games machines to multi-user minis and there were few alternatives for the seriously interested computer enthusiast. Is this still so now?

These days the PC Show (30th September to 1st October) has to compete with several other British computer shows (the huge Which Computer? Show in Birmingham earlier in the year as well as specialist shows like the new DTP show on October 4) and pan-European shows, such as the one in Frankfurt.

Still, the PC Show is the one that is probably most in the computer owner's public eye, the one everyone knows and therefore the one the others tend to be judged by; so how is it looking after all these years?

Well, for one thing it definitely looked smaller with several noticeable omissions – some due to the DTP show no doubt – including well known printer manufacturer Star Micronics along with several other big name hardware manufacturers. Of those who were there, many had smaller stands than in previous years, and ominously, there appeared to be empty (unsold?) stands.

There has always been a dichotomy between those companies who see the PC Show as a chance to sell their products on the day and those just putting in an appearance in order to raise their public profile. But while there is no doubt that while the show can generate publicity for a new company or product the main raison d'être of vendors is to make new sales contacts; they see it as a trade show. This leads to the three closed days with just dealers and the press before the buying public are allowed in.

Disparate attitudes to the show meant that while I was able to speak to directors on some stands I had to be content with a few where those present could do no more than refer me to head office for information – very strange when you consider the expense of mounting a stand at the show. Perhaps they were the ones waiting for the last days when anyone could go (so who were all those young persons in the games section?).

## PCW probe

On the PCW side users were well served by companies like Amnor, Iansyst, Amstrad and Locomotive – not to mention a host of stands selling cheap thins and thats (I told you not to mention...). Of course Future Publishing were there as well

promoting your favourite magazine. But the fact remains that with PCWs selling into private homes rather than large businesses it has never been worth while for companies supporting them to buy space at the large shows.

As if to underline this observation it has to be noted that even Locomotive are now pushing a product for the PC (what we want to know is which Future magazine will support LocoScript PC if Amstrad bundle it with a cheap PC and a printer?).

Ostensibly the show was divided into three sections; the trade hall, the leisure hall and the central hall, but once past the front doors it was rather difficult to find the dividing lines; even the games section was quiet compared with previous years. But the biggest disappointment to me was the lack of Far East exhibitors with their weird and wonderful widgets (who were much more in evidence last year – presumably new orders proved few and far between).

One show feature that I like are the presentations. These are an opportunity for software houses to show buyers their products in use, what they think are the important features and how they think their product scores over the opposition. This is interesting as much for what it reveals about marketing as about software. Add to the inevitable hype the expression of a presenter going through their spiel for the tenth time and the whole thing can take on a truly surreal quality. Not to be missed.

## Conclusions

Overall the show seemed more restrained and uncertain than in past years, as if it has lost track of what it's saying and who it's saying it to. Is it a shop window for the corporate computer manufacturers, for software houses selling £500 packages, for box shifters on tiny margins or a chance to try before you buy for games players spending £15 each? These are all very different markets where customers are used to being treated in different ways. Can one show, conceived in the days when computers were still regarded with something approaching universal awe, adequately serve them all?

For individuals looking for ideas, the PC Show is an eye opener, but for big companies looking to raise their profiles with buyers? There has to be an element of faith at work. If you're selling £5000 CAD systems why meet people looking for a box of cheap discs? It's hot, dry and exhausting – but I'm glad I went. It remains one of the few places where you still stand a chance of seeing everything from Psion Organisers to networked Unix systems; and I'm still fascinated.



Locomotive had their usual range of PCW products on display but were pushing LocoScript PC rather heavily.



Even in the first hours of the first day there is a lot of activity but the successful exhibitors can persuade people to stop.

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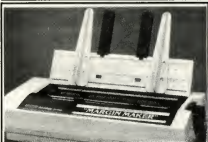
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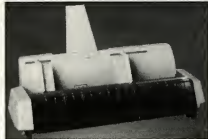


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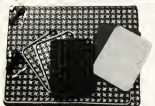
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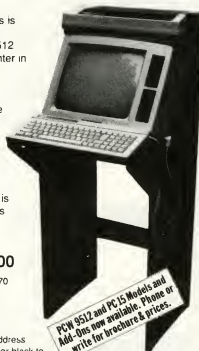


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# SHAKY STORY

Topologika's new game prompts Rod Lawton to get the play right

## AVON

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**W**hat do you do with a kilted Scotsman? How do you escape the attentions of that glamorous queen on the barge? What's so dangerous about Bare Mountain? Why shouldn't you enter the Capitol on the 15th of March?

Those who detected a common theme to those questions should immediately award themselves a dozen brownie points. They should also enjoy Avon, the latest adventure release from Topologika. Taking the works of William Shakespeare as its inspiration, it deposits the hapless player in a strange, unfamiliar world filled with cackling witches, hunchbacked kings and enchanted woods. Your aim is simply to get back to reality, but between that ideal state and your current position lie more than a few problems.

The world you have to explore is quite large and very varied. It undergoes abrupt transitions from Roman villas to deserted beaches, from quiet graveyards to 'blasted' heaths. And along the way you'll meet all manner of characters – some who'll help you, some who have objects you need and some... well, let's just say there are some you should most definitely steer clear of.

Avon takes as its theme the world and plays of William Shakespeare and integrates them into a typical 'find and solve' adventure. What happens as you proceed is that you come across puzzles and objects which feature in the bard's plays. Their use is quite well-judged, in that the answer tends to come to you in a blinding flash of inspiration. You don't have to know the plays off by heart, though, as sheer inspiration is just as important.

## 'Oh, proper stuff!'

Finding solutions to the puzzles is in fact extremely important. You can't just use the Save Game feature and put up with being killed repeatedly until you stumble across the right answer. The programmer has 'spoiled' the Save Game option in places, meaning that certain actions won't work unless you solved the puzzle 'cleanly'. What's more, where you come across a maze it's no use mapping it and thus assuming you've solved it once and for all – a new maze is generated each time you visit it.

These characteristics alone set Avon apart from the majority of releases. Written by Dr. Jonathan Partington, it improves further on traditional adventuring with both a (metaphorically) colourful backdrop and excellent plot structure. Perhaps its best feature is the way it relates traditional adventuring and puzzle-solving with facts we all half-know. Without having read Shakespeare's entire works, most of us have come across segments, quotes or famous catchphrases, and it's these which come to the fore in each new situation. Either they're delivered in the text for you to ponder over as you seek a solution, or they suddenly appear in your mind, triggered by careful hints on-screen.

Another excellent feature of the game is the built-in help mode. If at any stage you come to a problem you simply can't solve, simply typing 'help' will bring up a special help

## Monstrous bargain

Bundled with Avon is another adventure from Dr. Jonathan Partington – *Monsters of Murdac*. It takes place in the mysterious ancient forest of Murdac, a wood which has remained totally impenetrable until the old sorceress Duessa opens a path for you, at the same time muttering something about a quest...

Whether you survive the cannibals, ogres, the Old Man of the Sea and worse depends on your adventuring skills. *Murdac* features the same extremely useful Help mode found in Avon, and actually first appeared way back in 1986, courtesy of Global Software. In its latest incarnation it sports a couple of extra locations, but otherwise is identical to the original.

menu. By referring to clue numbers printed on a sealed envelope that comes with the game you can obtain a solution via a series of carefully-constructed hints, each of which takes you closer to working out the answer for yourself, without giving away too much. If you stay stuck, even after the final hint, you're offered a final solution – but not before being warned it's on its way.

## Back to the future

Avon is a fairly anachronistic release, in that it is a text-only adventure written in an age where graphics are all. The whole adventure genre, too, is undergoing a shift from traditional 'collect and solve' patterns into single and multi-user role-playing graphic extravaganzas. Traditional adventuring is not dead yet, though. Indeed, as long as releases of the quality of Avon keep coming along the genre should keep going for years.

And while the idea of a text-only adventure may seem anathema to anyone who's played such games as *Corruption* and *Jinxter*, it does have its advantages. The PCW is not a graphically accomplished machine, and it's not at its best displaying green and black digitised renditions of images from other versions of games. In *Knight Orc*, for example, about the only way to make sense of the pictures is to walk thirty feet away and squint at them from the corner of one eye...

It's fair to say that unless screens can be drawn specifically to take account of the PCW's own graphics limitations, you're better off with a plain text-only adventure – particularly if that means there's more room on disk for extra gameplay!

And gameplay is one of Avon's strong points. The action takes place over a very large area and there are a great many puzzles to be solved. Some of them are extremely difficult, but all of them can be worked out given the right turn of mind. The solutions, once discovered, are invariably logical and frequently relate to scenes from the plays which you kick yourself for not remembering straight away. You'll end up playing Avon for a long, long time – partly because it's witty, compulsive stuff, and partly because it is not at all easy and solving it will be a real achievement. Thoroughly recommended. ■

# FASHION VICTIM

The new Sharp IQ bills itself as a personal organiser, but how does it shape up in use?



There's no doubt that the Sharp IQ looks good. But just how useful is it when it comes to real world applications?

**T**he Psion Organiser was the first of the truly portable computers cum personal organisers and over the years it has sold in the hundreds of thousands. It was inevitable that other companies should eventually try to climb onto the bandwagon created by Psion, and while there are now many other contenders they all have to be judged against the original.

The Sharp IQ-7000 is actually smaller than the average filofax – not a bad thing if it's intended to replace it – and opens on a hinge like a book. It's also much more expensive than a paper organiser at £169.99 including VAT. On one side is the keyboard, with more functions than you could shake a church hall at, while on the other is a display screen (94 by 64 pixel, 16 columns by eight lines of characters or 12 columns by four lines of characters) and a touch screen over a slot for add-on cards.

One of the main problems with the sharp IQ is immediately obvious; those Sharp people have made it to the wrong orientation – it should have had the keyboard landscape instead of portrait. One immediate advantage having a long keyboard rather than a high one would have been to allow for a QWERTY keyboard. I'm sure I'm not the only typist who simply cannot find the keys on an alphabetically laid-out keypad. Well, that's what happens when you let designers decide these things (the same used to be said of programmers but most of them can type now).

Below the LCD screen the card slot has a touch

sensitive screen through which the functions of add-in cards are intended to be used. On the basic machine a protective card is installed with sample functions which merely illustrate those built in. Pressing the cover above each icon produces an illustrative display screen.

The IQ offers a wide range of built-in functions, the kind of thing which would be separated in your filofax by cardboard inserts with labels on. The built-in functions have dedicated keys which are, in order: Calendar, Scheduler, Telephone, Memo, Calculator, World and Home, all of which we shall look at in a bit more detail.

## How do they do it?

There is a lot to learn in order to use the IQ to anything like its full potential. While it's easy to get the individual functions onto the screen, it isn't always very clear how to get them to do what you want. In fact to use it extensively you would really want to have access to the manual most of the time – and that's bigger than a filofax. It would have been better if the help had been available on screen.

The memo function is the easiest to understand. It's simply a way to make short notes, though the software isn't exactly (or even similar to) a word processor; even a Basic programmer would reject it. Notes are stored as soon as the ENTER key is pressed and these are retained in the battery backed RAM while the IQ is off (which can be for up to two years according to Sharp though we haven't tested this claim). Memos can be searched for according to keywords or simply browsed through with the cursor keys.

There are three telephone lists (which you can name) into which you can put names, numbers and addresses. These are really very similar to the Memo function, and in fact you could just as easily use them that way. Similar searches are available under both functions.

More in the business vein, there is a scheduler, aimed at managing your hours as well as your days. This is rather pretty and produces a display suspiciously like a Gantt chart for each day's business. This is closely allied with the Calendar function, which displays a monthly calendar – to December 31 2099. However, it can also display a list of dates with scheduler notes attached – much more useful for finding out whether or not you need to get up on any particular day – and why.

The scheduler display didn't seem all that useful. Anyone with the time to sit and put it together can't really be in serious need of organising their day that way. It's more in the nature of an executive toy, as perhaps, is the world clock.

## Tiffin time

The built-in clock will show you the time in your 'home' city, which is initially set for New York; this is easy to change, as is the time itself. It can be displayed in 12 or 24 hour

## Strange but true

The IQ can drive several purpose-built peripherals including a printer, another IQ or a cassette tape deck. The printer is the CE-50P (according to the manual. This is a small, low-power portable thermal printer of the kind Sinclair used to make for the ZX-80. Quite apart from why you might need hard copy on the move (surely the whole point is that you don't?) carrying a 'pocket printer' around is going to spoil the line of your suit.

The IQ can also save data to cassette, thus presenting you with an opportunity to take a giant step backward in computing terms. This doesn't seem a particularly sensible option. It becomes even less sensible when you realise that you need the printer in order to drive the cassette deck (the Sharp CE-152). It would actually prove cheaper (and lighter) to back up data to another IQ; which can be done with nothing more complex than a cable.

## Secret service

The IQ offers rather good security in the form of passwords. Almost any kind of access can be controlled by setting passwords and defining data as secret.

You can protect whole categories of information or just a single item (like a phone number), but be warned, forget your password and you could find yourself with a very serious problem – unlike CP/M there doesn't appear to be any way around the IQ's secret function. Well that's the way it should be after all.



format. Working from your home city and the current time there, the IQ will give you the time in hundreds of cities throughout the world. No more guessing whether or not you'll be waking someone up at the other end – now you can be certain to wake them up.

However, be warned, the alarm and schedule times are not reset when the home city is changed so your eight o'clock meeting alarm call set in London won't wake you up at three in the morning in New York. Perhaps it is a good idea after all.

There is a built-in calculator which offers the usual four functions of plus, minus, divide and multiply as well as percentages and square roots. This operates in two modes: either in Calc mode, which is similar to a standard calculator, or in Paperless printer mode.

The big advantage of paperless printing over ordinary calc mode is that five lines of input can be seen – and edited – simultaneously. In fact up to fifty lines are retained and the display can be scrolled using the cursor keys. The answer at the bottom of the screen is 'live' and shows the results of the current state of the calculation; a very nice feature for anyone who ever wondered whether they'd actually put in that first subtraction – or forgotten it?

Below the level of the primary functions lurk a number of more obscure goodies. These are mostly concerned with the way the IQ is set up – which is to say that you can – to a limited extent – configure the way it works to suit yourself.

## Clip art

The Clip function allows you to make a single entry of up to 128 characters taken from any of the other functions. There can only be one clip entry and creating another deletes the first. This could be useful for storing information needed for a meeting, for example.

To get that entry in the first place save yourself some time by putting 'meeting room' in your user dictionary, from where it can be pasted into a memo entry (or anywhere else).

There are a few other bits and bobs that can be done but perhaps the most important is to check the memory. On the basic machine there is only 32k of RAM of which about 26k is usable. All memos, telephone lists, schedules and dictionary words are stored in this RAM, which therefore needs watching carefully.

The IQ is still very new and there is little in the way of add-in cards available yet. The most important of these are cards with extra RAM on but even these add only 32k or 64k to the basic machine. There is a Time/Expense manager card, a Thesaurus/Dictionary and a language translator card and that's it.

There are even more important omissions: of these the most important is the ability to initiate data transfers. The IQ must be controlled remotely from another computer (see Technical talk) but the lack of any kind of programming language is also a liability – even in a machine that claims to be no more than a personal organiser. The question has to be asked; if it's the same size as a paper organiser, does the same things as a paper-based organiser, and isn't as flexible or as easy to operate as a paper organiser, then why buy it? Well it does look smart and it is fun to use. ■

## Technical talk

Pocket computers seem to be dividing into two camps. There are those that really seem to be trying to sell as peripherals to deskbound computers, and those that seem intended to stand alone. The IQ is heading very firmly in the latter direction.

The problem is that pocket computers can't offer enough functionality to stand alone; to be other than a toy they must be able to interface to a larger computer – not least because of the problems with actually entering useful volumes of data into them.

The low voltage circuits used in the IQ can't produce the +5v and -5v needed to drive the RS232 interfaces of desktop computers, so Sharp manufacture a level converter (in two forms, one of which needs a mains supply and one that uses power from the RS232). This is intended for the PC but appears to be completely compatible with the PCW. The one we had consisted of the level converter and the necessary end connectors for both the RS232 and the IQ.

Getting information in and out of the IQ should be straightforward enough, and involves no more than sending a Control D character (EOT or CHR\$(4)) and a letter. The letter determines whether the IQ sends a directory, sends a file or receives a file. The file structure consists of a 21 byte header, the data and a simple additive checksum.

Although this is very simple to implement (it could even be done in Basic) there is no commercial software to work on anything other than a PC at the moment. However, Sharp are quite happy to supply the information needed to write an IQ link program, as well as the hardware needed (the level converter) to anyone who cares to write and market a link package for any machine.

As an attractive, well styled peripheral to a desk computer the IQ has a lot to recommend it. However, the IQ will inevitably remain unattractive to computer owners who cannot connect it to their main computer. Packages to allow any computer to drive the IQ ought to be a high priority with Sharp and they must appear soon if the IQ is to be taken seriously.



The Sharp IQ-7000 is a real fashion accessory but it would be a pity to see it fade as fast as most fashions. If Sharp fail to make it accessible to more of the people who are actually likely to buy one it will. At the moment the only communications link available for the PC (with one promised for the Mac) which isn't enough.

## Price guide

Cards for the IQ will cost you from £50 to over £50, which is pretty steep. The only link package currently available (for the PC) is £99.99. The thermal printer is £109.99 and the cassette dock will set you back £49.95. The cable to connect two IQ's together is £17.99.

# SPEAKEASY

Ownership and mastery don't always go together; especially in the computer world. David Wilson tells an awful tale.



David Wilson is a computer consultant working (sometimes) in the border country.

Once upon a time, when the world was young, I spent a year working as a driving instructor. I had many terrifying experiences, but my pupils were aware of at least one thing right from the start – the mere act of buying a car didn't qualify them to be let loose on the road. These days, I make a tenuous living helping the owners of farms and small businesses to computerise their accounts and records. While there's no actual risk to life and limb in buying a computer and plugging it in, I've still seen some pretty hair-raising things done, things dangerous to wealth if not to health. For instance, here's something that happened recently, and it's not untypical. Only the names have been concealed, to protect the guilty ....

The call came when I was out, but the message seemed straightforward enough. A local property agency had 'lost' a vital document. They did their word-processing on an 8512, using Protext – not exactly my favourite combination, but it sounded easy enough to sort out. When I got there, I found that not only was the document corrupted, but Protext itself wasn't working properly. Evidently there'd been some sort of power-surge which had messed up the discs. After a brief but nerve-wracking search, we found the Protext master-discs, and I confirmed that the document was genuinely unreadable.

"We'll have to get it from your back-up discs, then," I said. The reply was a blank look.

## The first lesson

This was the cue for one of my standard little speeches. You know all this already, of course, because you are a sensible 8000 Plus reader – I don't need to tell you that the only truly irreplaceable objects in a computerized office are the data discs. When you take a data disc out of the drive, you should

ask yourself if you would be at all distressed or inconvenienced if the disc flew out of the window, never to be seen again.

If the answer is yes, you should back up the disc instantly. Then, you must ask yourself whether your office is guaranteed proof against fire, flood, earthquake, and hurricane. Usually, the answer to this one will be no, so you should make yet another copy, and store it a good distance away. A nuclear holocaust would still beat your precautions, but data-loss would be the least of your worries ... While I was giving my sermonette, I was hacking at the dud disc with a sector editor, and, happily, was able to restore the document to life, but this isn't always possible.

All right, this was an extreme case. Not many people are quite so foolish, but I get enough emergency work to keep me in Woodbines. What alarms me more than anything else is the way so many people, people who have had the intelligence and ability to build up a business from scratch, seem to lose all their natural good sense and scepticism when they decide to buy a computer system.

## Nuts from him

Perhaps the decision to computerise cost them so much sweat and tears that they didn't have any energy left when it came to making the actual choice of machinery and software. Or perhaps they let a salesman or shop assistant make the choice for them ....

I've told you a tale of horror, but it isn't always like that. An old friend of mine has a small engineering firm, making funny-shaped nuts and bolts for special applications. He's got about a dozen weekly-paid employees, a secretary, and a book-keeper (I used to kid him about the cost of keeping her supplied with quill pens). A computer salesman had called on him, and had come within an ace of selling him a £15,000 mini-system, with the sort of capacity which ICI would have jumped at twenty years ago. I managed to stop him just before he signed the contract, and commanded him to buy a PCW.

"But will it do the job?" he asked.

I made another of my well-rehearsed little speeches.

"What have you got to lose?" I said. "If I'm talking rubbish, you'll have spent £500 on a super word-processor, which will pay for itself before it's out of its guarantee. But if I'm right, you'll have saved enough for the down-payment on that BMW you want."

He's now got three PCWs, two at the office, and one at home. I wish Alan Sugar would pay me some commission. Of course, I don't have to sell you on the virtues of the PCW, gentle reader. I'm preaching to the converted.

Or are you only half-converted? Do you really know all the things a PCW is capable of doing? If you're a regular reader of 8000 Plus you should, but even the vast range of commercial software which fills the advertisement pages is only part of the story.

Over the coming months, I'd like to share with you the things I've learned about what businessmen, doctors, farmers, dentists, and so forth really want – or do I mean really need – from a computer system. If a few million people read these articles, perhaps I'll be able to stop making my little speeches. ■

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# A PARTNERS' TALE

Sharon Bradley visits a training company in Bournemouth who are outward bound and gaining ground – every minute!

**F**ive minutes spent in the company of Sue and David Rogers are enough to convince you that this couple have really got their act together. The term 'joint venture' is one that repeatedly crops up in their conversation; at times, it's difficult to know whether they're talking about their alliance with publishing companies and language schools or their own highly successful marriage and business partnership.

For in just four years, Sue and David have built from virtually nothing a computer training company that is set to become a force to be reckoned with – not just in this country, but overseas as well. Of course, 'virtually nothing' is, perhaps, a trifle inaccurate; Sue had almost twenty-odd years' experience of technical teaching under her belt. Husband David on the other hand, an ex-builders' merchant, had accumulated many years' worth of experience on running multi-branch operations by the time the initial idea to go it alone was born.

## Physician, heal thyself

Sue had been teaching word processing for five years at a nearby secretarial college in Bournemouth when she first had an inkling of the yawning chasm that then existed in the market for good, structured computer training. 'She was becoming more and more disillusioned trying to teach people who didn't want to learn,' explains David. 'Most of her students belonged to one of two categories: either they were poor little rich girls whose fathers had enrolled them on the course because they didn't know what else to do with them, or they were YTS kids. Neither group wanted to learn.'

She decided to give up teaching completely and earn her living doing secretarial services from home.

Sue's father one day presented her with the springboard she needed to get her new venture off the ground: a complete word processing system that didn't cost two and a half thousand pounds – in the guise of an Amstrad PCW. It was this humble and unassuming machine that unwittingly provided the original inspiration for what was to follow.

Sue takes over the story. 'Once I'd got the machine, I didn't find LocoScript as straightforward as I'd thought I would – and I'd been a qualified word processing teacher for three years. If I was having trouble, there were bound to be more people out there having an even tougher time of it.'

On David's suggestion, Sue decided to sell the notes she had been making to get herself through the software to other people. Once she had learnt the package more



Husband and wife team David and Susan Rogers proving that software training has no boundaries

thoroughly, it seemed a natural enough progression to go on and advertise her personal training services through the pages of the local newspaper. 'By the following February we'd drummed up enough interest in the training – which up till then I had been doing at evenings and weekends – to make giving up a full-time job worthwhile. The business more or less took off from there.'

After about a year of going it alone, David, who had hitherto been standing on the sidelines, began to assume an increasingly indispensable role in the company – at that stage known as Velda Training – until his contribution became continuous.

'We had 11 computers running from home this time last year – including two in our bedroom!' jokes David. The couple decided to register the growing business as a limited company, changed its name to Computer Training Centres (UK) Ltd and, finally last January, moved into attractive new premises five minutes' walk from the Bournemouth seafront.

## Programmed for success

Since then the company has gone from strength to strength and now manufactures training courses in up to 35 different programs – from word processors to spreadsheets, accounts packages to databases. Even though CTC

## DIY Publishing

If you're wondering why the name of Susan Rogers sounds roughly familiar, that's because we've featured a couple of her LocoScript training guides in our Book Look pages at various times in the past: Looking into LocoScript 2 (November 88, p45) and Easily into LocoScript for the Amstrad PCW 8256/8512 (September 89, p39).

Not content with present endeavours, Sue and David would one day like to be publishers in their own right. That, however, takes time and money. For the moment, David and Sue go as far as they possibly can on their own with the books that they create. 'We write and typeset them ourselves; all the publisher does now is to print them. Until the time comes when we can go the whole hog by ourselves, we are happy to work hand in hand with an excellent publishing house like Prentice Hall who have commissioned us to write a series of 'Looking into' titles.'

has branched into software specific to other machines, Sue reckons that LocoScript 2 still counts for over a third of their training requests.

The couple are anxious to stress that they are, whenever possible, market-driven. 'We always try to satisfy a need,' maintains David. 'If someone phones up asking for training on a particular piece of software and it's not a package that we cover, then we'll make a note of it and see how many others ask for it. If the same request keeps cropping up we'll decide to do it. We buy the program and the trainers will then go away and spend up to six weeks getting into the program and writing the training courses.'

All of CTC's training material is written in-house by Sue and the other trainers. 'We never stop,' she says. 'If we're not training, we're writing. And, of course, all the material that we write must incorporate those techniques that have been tried and tested in my published guide-books.' In addition to conforming to that highly successful formula, the training material for each program that the company covers is prepared in three different ways depending on how it's going to be delivered: on a one to one basis, in a group, or on-site with one of the company's mobile trainers.

The main difference between the Rogers' in-house training methods and those of other training companies is that their courses are not 'fixed' to run over predetermined periods – like a college. 'Our courses,' says Sue, 'are tailored made to the clients' requirements. In most cases they can have the training immediately. Only in very unusual circumstances will they have to wait – and even then it will only be for the trainer or a training-room.'

Unfounded accusations of cowboy dealings have been levelled at Sue and David in the past. On what basis, we enquired?

## Home and away

'Some people,' explains David, 'have found it difficult to take us seriously because of the prices that we charge. Let me give you an example. For six hours of on-site training on a one to one basis in the centre of London, we will charge £150 plus travelling expenses. Other companies we could name charge nearly £300 for the same thing. There's a definite rip-off element in training: for some reason, people assume that it has to go over at a very high price. It's a load of nonsense.'

The Rogers training is cost-effective relative to the price of the machine. As Sue rightly points out, who is going to want to spend £300 on a day's LocoScript training when they've just forked out £400, £500 on their PCW? CTC 'deliver lean', as David puts it, and they know how to do it well.

CTC (UK) Ltd have sprinkled liberally across southern England a whole fleet of freelance mobile trainers whose task it is to deliver on-site training to corporations and individuals in need of software expertise. Sue and David are now busy recruiting new trainers further up so that by December they will be fully operational as far north as Liverpool. By April of next year they hope to be staking their claim on the other side of the Scottish border.

One of the most important pieces of equipment that each member of the mobile fleet must possess is a Fax machine. 'Each of our trainers,' explains David, 'will operate a franchise which amounts to their local yellow pages territory. We will be taking care of all their administration – bookings and so on – down here in Bournemouth and will be Fax-ing all their assignments to them. If they hit some kind of problem while they're out on-site, they call us. One of our trainers will always be here to answer their calls. We get to work on the problem, telephone the answer to the client and Fax the answer to the trainer who is by this stage busy on the next assignment.'

Right from the beginning it has been the Rogers' intention to carry their training techniques further afield than the UK. That's why they devote so much of their time to developing the training material. Its role in the international expansion of the company is crucial. At present, the couple are putting all their energies into getting a major joint venture off the ground – this time in Abu Dhabi.

## PCW Pride

Perhaps not surprisingly, the company's training efforts have gradually shifted to cater more for the PC software market. Although PCW-specific training is by no means extinct, it tends to be the small-businessman more than anyone else who requires the company's services.

'Having said that, the PCW,' says David, 'is a much under-rated machine. It's capable of doing a lot more than people generally give it credit for. One gets the feeling that those who sell them aren't 'pushing' them hard enough – perhaps because the profit margins aren't there on them. Or maybe they themselves don't realise exactly what the machine is capable of doing.'

'Either way,' says Sue, 'even though we have our choice of PCs, we prefer to run the whole business on the PCW – databases, spreadsheets – the works. Just like we've always done. It's a versatile machine, we all know it inside out and the output is always nicely finished off. What more could we ask for?'

Originally Sue and David would produce their training material in-house on their trusty PCW to send to LocoScript-learning markets in Australia, Holland and Belgium.

'In fact,' says David, 'there probably isn't a single country this side of the Iron Curtain that we haven't sent one to.'

## Home and away

Recently the Rogers have taken on board a new partner who operates a series of English Language training centres at home, overseas and – of course – over there. They are preparing to combine forces. 'Already he has the translators and the trainers ready and waiting,' says David. 'It's now just a question of getting the course material to him so that it can be translated.'

It's not quite as easy as that though; for while David is the first to acknowledge that women make better trainers, the Middle East is not perhaps the best environment in which to place one. Instead, their local CTC operator must

recruit male trainers and send them over to Bournemouth for up to two months' intensive software and technique training. At the end of that time and armed with the necessary material, they should be ready for 'replanting' in their home surroundings. The aim is that as well as receiving their formal English Language training, large Middle East companies like FIAT can also profit from the latest Western software training.

It's certainly a very ambitious project. 'We would like,' says David, 'a franchise inside the UK and use this building purely as a base – for research, development and eventually for the training of trainers. We're not trying to end up with a fifteen-storey office block in Bournemouth with CTC blazoned across the front; if that does happen, then we've failed in what we are trying to achieve. We're interested in working with overseas people on joint ventures.' By the end of next year, the couple hope to be operating from eight centres in Europe, six in Malaysia and three in the Middle East by the end of next year.

So what's the secret behind the Rogers success? Sue and David exchange secretive smiles. 'Definitely the au pair,' says Sue. 'Without her there's no way we could function. We both work full time, ten hours a day, seven days a week. What would we do without her?'

If you think Computer Training Centres UK Ltd can help you talk to either Sue or David on 0202 299676.

## Child's Play

During the school holidays, CTC offer word processing, database and spreadsheet training to children over eleven years old. The tutor-led in-house classes which run three mornings a week have so far proved very popular. 'Unfortunately,' says David, 'we get many more boys than girls.'

## Package deal

Although the company offer training in up to 35 packages, there is, says Sue, a nucleus of programs that people come back to again and again. They are LocoScript, Word Perfect, Word Star, Professional 5, Lotus 1, 2 and 3, SuperCalc 2, 3, 4 and 5 and finally Sage Accounts.



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# DAISY ANSWERS

Larry Whitlow gets to grips with foreign printwheels on the 9512

So you're a multi-lingual whizz-kid, and you want to show off your command of other people's native tongues to prove it? You know how to communicate with a German bicycle manufacturer or a French polisher in his native language; or maybe you just want to impress the world with your knowledge of Greek but – your PCW daisywheel printer can't cope.

What to do next? Relax; while it may not be as easy as falling off a log it's perfectly possible to persuade the PCW 9512 to speak like a good European.

If you have to type in a foreign language on the PCW 9512, whether it is a document, letter, reference or even a name and address you inevitably find that there are a number of characters in that language which are not part of the English alphabetic character set. These characters can be typed – but to print them it is necessary to acquire the relevant language program as well as a printwheel bearing the correct characters. If the language is French then all that is necessary is to insert the Swiss/French printwheel, and change the printer settings in the 'Document set up' menus to the Swiss/French printwheel, and the French characters can be printed.

This simple approach doesn't apply to other foreign printwheels; you must also install the software that defines which characters are included on the printwheel and on which petal they are located. The character set files, as they are known, for other foreign languages are obtainable on the Printwheels disc from Locomotive Software (priced at £14.95).

These files can only be installed in version 1.2 or later of LocoScript 2, but version 1.6 is supplied free with the Printwheels disc. With this disc it is also possible to create character set files for any language printwheels which may become available at a later date.

Even with the foreign print-wheel and the appropriate character set file, you still have to use the key combinations given in Appendix III of the User Manual to type the characters you want. For example to type ü with the German printwheel, it is first necessary to type [EXTRA]W, to get the accent '´', then u to obtain the accented character ü. Even though the accented character ü is actually to be found on a petal of the German printwheel, the character '´' does not exist as a separate character on the print-wheel.

With the exception of Greek, all the printwheels have about 80 common characters – the alphabetical and punctuation characters. They do not all occur in the same place on the printwheel. Because of the different positions of the characters on foreign keyboards, it is essential to ensure that the printwheel matches the character set displayed before printout. If this is not done, then some of the characters will be printed wrongly or may be missing.

## Key facts

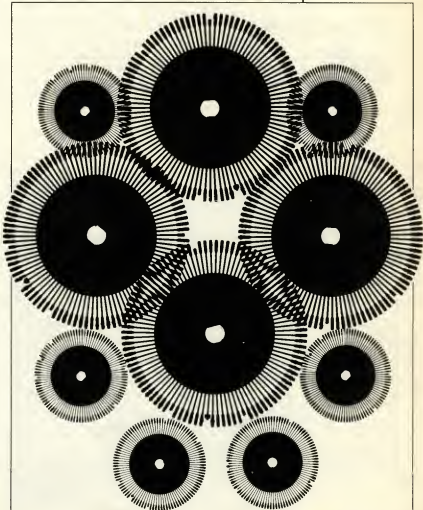
When LocoScript is being used and a key, or combination of keys, is pressed; the character corresponding to this key or keys is looked up in a 'keyboard table', which then inputs this character into the document being

## Bespoke keyboards

If you want to obtain accented characters using a single keystroke on the main keyboard, or on a different keyboard layout to correspond to a normal foreign typewriter layout, or even to use a foreign layout like the French AZERTY keyboard – then the programme KEYBOARD.JOY in the Systems Group on the LocoScript Start of Day disc must be modified. This is done by using the LOCOKEY disc, which is also available from Locomotive Software.

This is a simple but tedious operation. Using two cursors similar to those used during 'Disc Management', select the characters from an array of all the LocoScript characters displayed on the screen, and then paste them on to the appropriate keys in a representation of the keyboard, which is also displayed on the screen.

It is also possible to to superimpose one character on top of another, for example, to produce an accented character from an alphabetical character and a separate accent. All the keyboard options, [EXTRA], [ALT], GREEK, SYMBOLS and CYRILLIC, can likewise be designated with whatever characters or combination of characters are present on the printwheel. This operation produces a new keyboard file which is labelled LOCOKEY.JOY. This is then used to replace the copy of LOCOKEY.JOY present on the LocoScript start of day disc.





### In style

The combinations of alphabetical, numerical and punctuation characters are referred to as 'Character Sets', and since they are each associated with a particular language they are designated by the name of the country, for example England, Germany, and so on. The only exception is the ASCII Character Set. The different typefaces and pitches used for these character sets are referred to as 'Character Styles'. They are designated according to the typeface and the pitch, for example COURIER 10 and SCRIPT 12.

prepared. This 'keyboard table' is loaded to the System group of the drive M from the Systems group on the LocoScript start of day disc during loading. Thus while it is possible to have several keyboard files, there can only be one LOCOKEY.JOY file in the Systems Group.

For another keyboard layout there must be either a separate start of day disc with the appropriate LOCOKEY.JOY file, or alternatively, the new keyboard file is stored on the disc with another filename. If you need to use more than one keyboard layout this second version can be copied into the systems group when required, to replace the original keyboard file as LOCOKEY.JOY. Unfortunately the system then has to be reloaded before the new keyboard file can be used by pressing [EXTRA][SHIFT] AND [EXIT] at the same time.

This means that in addition to having to swap keyboard files and then reload, it is virtually impossible to use more than one keyboard layout in the same document. There is, however, a way of overcoming this disadvantage, which is to make fuller use of the GREEK, CYRILLIC and SYMBOLS keyboards, which are selected by [ALT][I][3], [ALT][I][5] and [ALT][I][7] key combinations respectively.

There are also two other keyboards, [ALT] and [EXTRA], but the [ALT] or [EXTRA] key must be pressed at the same time as the character keys. In addition they each have their own particular disadvantage. The [ALT] keyboard only functions as an additional keyboard when the main keyboard is in the normal or default mode - which means the standard English keyboard.

If the main keyboard is in any other keyboard mode selected by [ALT][I][3], [ALT][I][5] or [ALT][I][7] the [ALT] keyboard returns the characters corresponding to those of the main or default - English - keyboard. The disadvantage with the [EXTRA] keyboard is that it does not have 'shifted' characters - there is only one character associated with each key and the [SHIFT] keys have no effect. Clearly these two keyboards can only be used for characters which are not often required.

Getting to grips with the problems caused by the relative inflexibility of the daisywheel - as compared with the dot matrix printers - presents a few initial difficulties but the effort involved opens up new areas for the PCW 9512. ■

## Installing the character set file

### Supply side

Two suppliers we know of who stock foreign language printwheels for the 9512 are: Walney Audio Visual, 1 Buccleuch Street, Barrow-in-Furness, Cumbria LA14 1SR on 0229 870000 and Microbridge, Kettlestring Lane, Clifton Murr Industrial Estate, York YO3 8XG on 0904 650617.

1. Load LocoScript 2 (this must be version 1.2 or later)
2. Insert PRINTWHEELS disc and press [I]
3. Copy the character set files PCW9512.XXX, where XX denotes the language, into Group 0 Drive M
4. Insert start of day disc and press [I]
5. Copy the character set files from Drive M to Group 0 Drive 1
6. Press [I6] for Settings menu
7. Select For Character Set and press [ENTER]
8. Select one of the new character sets and press the Set key [+\*] followed by [ENTER] to return to the main menu.
9. Select Character styles to set any other character styles for the language selected.
10. When this has been done press [ENTER] and repeat steps eight and nine for each new character set file.
11. When all the required character styles for the new printwheels have been entered press [EXIT] followed by [ENTER]
12. The option is now there to write all the new character styles in SETTINGS.STD, to make these character styles permanently resident in the SYSTEMS group.

## Keying in tongues

Let us assume you need to use English, French, German, and/or Greek characters; and the keyboards have been arranged by means of the LOCOKEY program to give the required keyboard layouts. The default keyboard layout - [ALT][I][1] - is retained for the English character set, with all the characters being the same as the characters engraved on the keys. The [ALT][I][3] keyboard is used for the Swiss-French characters set, the [ALT][I][5] keyboard for the German character set, and the [ALT][I][7] keyboard for the Greek character set.

With the French and German [ALT][I][3] and [ALT][I][5] keyboards, the accented and additional alphabetical characters peculiar to these languages have been placed on the associated keyboard, and some of the English characters which only occur on the English printwheels have been replaced by characters which occur in these languages, for example (§) in place of (@) for both these keyboard layouts.

For English and the two main foreign languages, the keyboards correspond to the alphabetical, numerical and punctuation characters which are engraved on the keys. The two right hand keys of each of the two centre rows of the keyboard have been used for the accented and additional characters in the foreign languages. The characters from these four positions have been transferred to the [EXTRA] keyboard, although not all of them are available on the foreign printwheels. Since the German printwheel has no pound character this has been replaced by the percent sign, which is unique to the German printwheel.

The square brackets [], the angle brackets <>, the vertical line | and the hash sign # have been transferred to the [EXTRA] keyboard, but they are also available in their normal place on the English keyboard. Some of the additional characters such as the superscripts 2 and 3 and the degree sign have also been located on the [EXTRA] keyboard. In addition some of the accents and accented characters have also been placed there since they are sometimes available in some languages in which they are not part of the national alphabet.

In fact, these characters were defined on the [EXTRA] keyboard in LOCOKEY specifically for a particular language. For example, the umlaut (¨) occurs on the Swiss/French printwheel, and so this character and the unaccented characters ü and ö have been placed on the [EXTRA] keyboard, so that they can be printed when the Swiss-French keyboard is being used.

But where they occur as normal accented characters in any other language they will also appear on the [EXTRA] keyboard set even though they may seem superfluous, for example the unaccented characters ü and ö which occur on the main German keyboard - [ALT][I][5] - and also occur on the [EXTRA] keyboard when it is used in conjunction with the German printwheel. Likewise any characters which have been defined in the [EXTRA] keyboard set which do not occur on the printwheel in use will print a space.

### Next month

When characters from more than one language set are required in the same document, problems crop up. You have to change the printwheel while printing out a document, a requirement which is not provided for in LocoScript 2. It is possible to overcome this difficulty. Various methods of using different printwheels in the same document will be described in the next issue.

# CONNECT

## Software Ltd

### What users say about Money Manager - 3

I have been very pleased with the program, in fact it is an indispensable part of my business. My accountant is pleased and I'm sure it saves some of his fees due to the reports etc that I can give him. It's incredible that it can be so good at this price.  
(L.P. - Walsail)

Having installed the program, without the difficulties which I normally expect from a new program, may I confirm my delight in its operation.  
(R.B. - Warrington)

I have been using Money Manager for about 2 years. I keep our office accounts and holiday letting accounts on file using the system and have only praise for its ease of use.  
(P.L. - Southwold)

I am writing to congratulate you on Money Manager. As a semi-retired accountant working from home I find it ideal for production of clients' accounts. I feel that this excellent program has never received the praise it is entitled to in the computing magazines and hope one day to write an article emphasising just how invaluable it have found it.  
(H.B. FCA - Bristol)

I received Money Manager 12 days after ordering it, which I think must be a record for execution of a software order at this distance. Thank you so much for your superb service. I can already see that the program is of at least all you claim for it, and thus will improve the quality of my accountancy (and hence of my life) markedly.  
(J.S.T. - New Zealand)

I have found the Money Manager a boon to me, particularly with the VAT.  
(R.B. - Glastonbury)

I have had one or two disappointments with software programmes since buying a computer four months ago, but your Money Manager was not - my thanks.  
(R.B. - Northants)

I just had to write to congratulate you on yet another excellent upgrading of the Money Manager program. Since I received the upgrade last week, I have been able to improve my accounting even more than before - the Calculator and Macro functions are so helpful. The original Money Manager was good, Money Manager Plus was great but this is the best yet! Congratulations also on another first class User Manual which makes the program a joy to use.  
(J.P.K. - Cardiff)

I thought I would just drop you a line to say that I think your Money Manager is a bonny program. It suits our modest-sized business purposes splendidly, and copes elegantly with a whole range of our requirements.  
(A.M.C. - Norfolk)

May I take this opportunity of complimenting you on the Money Manager program. It is certainly the most cost effective piece of software I have bought and is used at least twice a week for the church accounts.  
(A.J.C. - Macclesfield)

I find that I use the Money Manager program at least once a week to keep track of my UK accounts and my Brazilian cruzado account which is beset with inflationary numbers. Because this financial control is regular, I find your program is essential for my personal financial management.  
(D.G.S. - Sao Paulo)

I have recently purchased a copy of Money Manager and I am very impressed. It represents some of the best value for money I have ever seen, and has obviously been written by someone who actually uses a computer rather than a mere programmer.  
(R.T.B. - Sheffield)

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The program includes many helpful features, such as pop-up calculator, context-sensitive help windows and macro commands. The Money Manager package has over 25,000 users in the UK alone. It is the ideal program for people who find that traditional accountancy programs are too complicated, unwieldy and time-consuming for their requirements.

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- Up to 20 user-defined accounts: Bank, Cash, Visa, Savings etc.
- Up to 50 user-defined classes of income and expenditure
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- Bar chart for up to 4 selected categories
- Pie charts of up to 20 selected 'slices'
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- Totals for each class of transaction for any period
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# TOYS FOR T

Why doesn't the computer industry attract more

**E**ducational and career equality for women – wherever practically possible – is nowadays a universally acknowledged goal. We say 'wherever practically possible' simply because few women would probably be prepared to stand their ground and argue that they can do just as good a job as any man when it comes to, say, working on a building site or in the course of heavy-duty police work. Having said that, accessing the knowledge required for the purposes of self-advancement, whatever form that takes, should be everybody's unquestionable right, regardless of sex – or so the theory goes. Sometimes it sounds as hollow-sounding as all those other well-worn and meaningless aphorisms; the truth of the matter is that a yawning gap still exists between these glibly-professed

objectives and actual practice.

In today's secondary schools, for example, a sharp division remains – in terms of subjects being studied – between boys and girls. What's more, it is a division that manifests itself again and again in the career paths chosen by those pupils long after the classroom doors have closed behind them for good.

Statistics gleaned from the Department of Education and Science reveal the following: in the academic year 87/88, 4,164 men enrolled at British universities to become full-time undergraduates in Computer Studies; only 410 women enrolled for the same course. In the academic year 86/87, 3,802 men enrolled for the same course compared with 425 girls, and in 85/86, 3,653 men enrolled as

## Nature or Nurture?

Some psychologists have suggested that there are innate differences between the sexes, possibly genetic in their origins. They believe that these differences affect the way that intelligence is applied to certain subject areas. Differences in spatial ability, for example, are said to account for the predominance of boys in mathematical and problem-solving activities. Girls, they say, will tend to break problems down into multiple stages and this can lead to a greater chance of error.

## Fiona Hurd

'I was lucky. I could have fallen flat on my face,' recalls Fiona Hurd, with more than a hint of relief. She pulls up a chair and leans on the large desk that seems to occupy most of the floor space in this plush inner sanctum office at the Opus Technology headquarters in Surrey. Leaving a career that you're already well up in after six years to start afresh somewhere else – from the bottom – is a gamble. Luckily, this was one gamble that paid off, she says.

In May of last year, Fiona quit her six-year-old career in the oil industry to join the Customer Support department at Opus Technology Ltd, the company that manufactures and sells its own PCs. A growing disillusionment with the former combined with a strong desire to get involved with the latter were all that it took. She's proud of her progress – and rightly so: 'Not bad in a year,' she grins, 'and it's fun too.'

We asked Fiona if she had ever undergone any formal electronics training before. 'None at all. My job in seismic processing involved a lot of hardware handling and it was then that I realised I was enjoying this aspect of the job much more than just sitting in front of the terminal.'

Fiona's academic path to success, not surprisingly, involved making substantial inroads into those areas of study traditionally thought of as male. The same was true of university (where she took a degree in geology), the oil industry that followed and now her present career. Fiona, though, like many professional women in her situation, subscribes heavily to the philosophy that provided you know what you're talking about – and you have the aptitude to learn – sex is entirely irrelevant. She cites as examples a number of new recruits in the company's technical support department. 'The girls,' she says, 'are just as quick as the lads to pick it up.' That's not to say however that she's never had to deal with the occasional stropky caller.

'Oh yes,' she says, raising her eyes to the ceiling, 'you pick up the 'phone and say "Good afternoon, Customer Support here," and you can almost hear them freeze. The same happens at shows when I meet some of our clients face to face for the first time.'

Some are really surprised; some – to give them their due – don't even bat an eyelid. I get the occasional 'Oh my God – you're a woman!' response when I'm called over to help with a technical query. That just makes me more determined to sort the problem out – especially if they think I can't do it.'

Fiona remembers the client who phoned up with a particular problem, refusing to believe the solution she offered until he had heard a male colleague say it. 'That was a one-off, though,' she chuckles.

We asked her if there are times when being a woman is a distinct advantage.

'When you're supervising a company's services, people can get



Fiona Hurd, Customer Support Supervisor at Opus Technology in Surrey

very aggressive. I've dealt with aggressive people who would probably have gone straight for the jugular if I'd been a bloke. You can get round them more easily as a woman.'

Fiona is anxious to add, however, that incidents like these are becoming less and less frequent as more women come into the industry.

So just how highly-prized is her role in the company?

'The company makes computers and sells them,' she explains. 'Technical support and the workshop are, if you like, luxuries. The company pays our salaries to support the product. But they don't get anything back monetary-wise from us. It has to be highly-prized or we just wouldn't do it; and, of course, a lot of companies don't.'

It is with an expression of mock-afraid that Fiona answers our question as to whether she earns the same salary that a man in her position would command. She is also convinced that the career moves that have been available to her in the past and will be open to her in the future are all equal opportunities ones.

'I don't work in a purely technical environment anymore. Supervising the customer support department, I have had the opportunity to progress into man-management areas. I feel that if I did want to progress in a certain way, there'd be a channel I could go down.' As Fiona herself says, 'I feel that I know my job and my products well enough to hold my own no matter what!'



# THE BOYS?

act more women? Sharon Bradley investigates

opposed to 452 girls.

More girls are embarking on higher education courses – irrespective of subject – than ever before. It's also true that more girls are studying in areas that have a clearly-defined professional relevance and are making inroads in other traditionally male-dominated arenas like law, architecture and business management. Why, therefore, as we've just seen, is the number of women enrolling on British university Computer Studies still so relatively small and decreasing while the number of men beginning equivalent studies is on the increase?

## All things being equal

Lisa Payne is Lecturer in Computer Science at Coventry Polytechnic. She also works on the Women and Work Programme based at the Polytechnic, teaching computer courses to women. As a result of studies conducted with two

groups of 13 to 14 year old girls, Lisa has been able to formulate her own tentative theories as to why more women are not developing careers in the computer industry.

Explains Lisa: 'We conducted two workshop sessions over a period of two days, each workshop consisting of a hundred girls. At the end of each day's presentations, we asked the girls to do some sketch drawings which would accurately reflect the way they felt about 'computer people.' The results were very interesting.

80% of the class thought that 'computer people' were men; only 20% of the girls saw them as being female. 50% thought of them as young, 40% as middle-aged, and only 10% as old. Again, 50% felt convinced that 'computer people' had to be ultra-intelligent, 40% agreed that an average level of intelligence was probably all that was required, while only 10% said that 'computer people' didn't have to be all that clever after all.

## Jean Gilmour

Jean Gilmour is Senior Technical Writer at Locomotive Software in Dorking, where she has been working for the past four and a half years documenting the company's ever-diversifying range of products.

'Initially,' she explains, 'I was the only technical writer here. Now, though, I'm Senior Writer and do tend to have my oar in just about everything. I don't do the writing single-handedly. Since Locomotive's expansion, I have taken on an assistant and a junior to help me.'

In a high-precision industry like the one in which she works, Jean is convinced that the odd female attribute can be a distinct asset: 'In general,' she says, 'women are much more prepared to work at something until they get it right. Men are happier accepting something that's nearly right – but not quite – so that they can get on and tackle the next job.'

Jean is the first to admit that a certain degree of perfectionism isn't necessarily a bad thing when it gets to her particular neck of the woods – writing and page layout. 'You need to be fussy. It's a pain in the neck, it requires a certain amount of effort, but there's no getting away from the fact that the results are better. And being a female helps from that point of view.'

As a Cambridge physics graduate, the female contingent of her course was heavily outnumbered: 'In my year at Newnham College, 15 to 16 of us were doing Physical Sciences. By the third year, three of us were concentrating on physics alone out of a class of 96 students.'

Journalism has always exerted a strong 'pull' on her: after leaving Cambridge, Jean worked for a while in the Institute of Physics Publishing Division in Bristol editing papers regularly sent in to one of the academic journals. Five months later she was working on the members' magazine, *Physics Bulletin*. 'This,' says Jean, 'was work which involved writing, commissioning, editing – in fact, anything you care to mention; at that time, there were only three of us putting it together.'

From there, she edited *Radio and Electronics World* and was working as a Reporter and Features Writer for *Electronics Times* when the job at Locomotive came up.

Jean refuses to acknowledge that she has, in any way, 'gone against the grain' in pursuing the career that she has. She shrugs nonchalantly: 'If you're a scientific person and a female – well, a number of us go into writing. I don't see myself as being particularly rare in that sense.'

Have there, we asked, ever been times when she felt that being a



Locomotive's Senior Technical Writer, Jean Gilmour

woman was holding her back or, at least, creating obstacles?

'I've never had any difficulty getting a job in this industry. Once into a job, I've experienced no obvious difficulty in progressing. You must bear in mind, however, that everything I've done has involved working quite closely with a small group of people, so there's a slightly different perspective there to progressing my way up a large company ladder. It's definitely a case of who you are and what you can offer, though, rather than what sex you are.'

Jean is a little bemused by the distinct lack of women programmers at Locomotive: 'All the programmers here are male, but that isn't deliberate. To say that there aren't any women programmers is obviously a generalisation, but we haven't come across any who are able to work in Assembler – which is what we use here,' she explains.

Jean's message, like Fiona's, comes over loud and clear: 'Provided you've got the aptitude to learn the trade, it doesn't make any difference what sex you are. It certainly doesn't make any difference here – I'm just me.'

## Occupational hazards

Traditionally feminine occupations which often come to the fore during secondary school years can be divided into six areas: teaching, nursing, catering, office work, retail and hairdressing.

But perhaps most tellingly of all, 80% were convinced that they were ugly; for another 70%, being interested in computers was synonymous with being boring.' The interesting thing was that they had spent a whole day in the company of professional computing women before arriving at these conclusions.

Misconceptions like these are common at even earlier ages. Lisa describes how a group of five year olds were asked to describe a typical 'science person' during the course of a similar study; the majority of the children saw such people as clever, but nonetheless boring, old men.

The implications are clear; sexual stereotypes are being set up at a very early age and children are being encouraged to believe that interests and activities of boys and girls are mutually exclusive.

### Mixed blessing

Another theory suggests that girls don't fare as well as boys in co-ed settings. Just as boys will be more likely to choose cookery and needle-work in an all-boys school, girls are more successful in 'male subjects' when they study them in all-female surroundings.

Lisa suspects that the reluctance on the part of girls to go into computing-related careers may have something to do with the large-scale introduction of microcomputers into schools. 'They are being exposed to the machines at school, they decide that they don't like what they see and simply choose not to have anything more to do with them,' she says. Why don't they like what they see?

'A lot of secondary school computer clubs take place in the childrens' lunchtimes, and although I'm not saying that this is something that happens in every school, often the machines become monopolised by the boys playing Star Wars and the usual 'Zap, Zap, Bang, Bang' games. Not surprisingly, the girls can be put off by this.' Lisa thinks that separate computer lessons for girls may well provide part of

the answer. It's divisive and I agree that it shouldn't have to be this way, but I think the results will be interesting.'

As far as women at a non-graduate level are concerned, they seem simply to be suffering from a severe lack of both aspiration and confidence, thinks Lisa. For many of them, computers are simply too complicated and difficult to handle, and, therefore, not worth getting excited about. This is another popular misconception that Lisa is doing her best to address with her contribution to the Women and Work Programme: 'Women,' she insists 'underestimate their abilities far more than men. All we are trying to achieve is to help them realise their full potential and banish the unreasoning 'computer phobia' that many of them still feel.'

With more and more microcomputers - like the PCW - making their appearance in homes and schools alike, perhaps the time has come to relegate to the sidelines once and for all their reputation as predominantly games-playing machines. In the hands of discerning parents and teachers, even the PCW can do its bit to help eradicate the kind of blatantly inaccurate stereotyping that young women are evidently still prey to - particularly during that crucial period when educational choices that have a direct bearing on future careers are made. Learning to think of the microcomputer, whatever its denomination, as a genuine gender-impartial educational aid rather than just a 'zap, zap, bang, bang' amusement arena might provide just part of the answer.

Research has shown that up to 20% of PCW users are women; it's also clear that the machines are playing important, if not indispensable, roles in a wide variety of data processing activities - from running a business to writing a letter. The important thing is that not one of those activities can be accused of closing its doors to women.

The PCW can provide anyone - whatever their age or gender - with an easy gateway into the world of computers. It's up to today's generation of parents and teachers to remember that.

### Getting on your WIC

Helen Watt, lecturer in Computer Science at Glasgow University, is only too well aware of the fact that girls undertaking computer-related studies at universities and colleges are still drastically under-represented. She plays a very active role in a relatively young campaign called Women into Computing. It is, as she readily points out, a national organisation which aims - through a series of locally networked workshops - to encourage young women with aptitude to consider computing undergraduate courses and careers.

If you'd like to find out more about Women into Computing, contact Helen Watt on 041 339 8855.

## Fiona Faulkner

Fiona Faulkner, who works as a Systems' Analyst at MOD Ensligh in Bath, admits that her entry into the world of computers was not exactly a premeditated one. 'No,' she laughs, 'I certainly didn't wake up one morning when I was ten years old with a burning desire to be a systems' analyst.'

Fiona works for the largest organisation at MOD Ensligh - the headquarters of the Royal Navy Supply and Transport Service. The organisation supplies the Navy with absolutely anything that it might require - from ships' engines and armaments to food and beer. Consequently there are naval supply depots dotted throughout the country.

'As a systems' analyst,' explains Fiona, 'it's my job to travel out to meet suppliers on site and work out exactly what computer system might be required to make the task that is being performed there either easier or more cost-effective. Once you've reached an agreement about exactly what sort of system is needed, you have to start thinking about modelling the data to fit the requirements.' That's where the hard graft of programming begins, a job that Fiona did for a couple of years before assuming her present position eighteen months ago.

Fiona had been working in the Civil Service for nine years, in a mostly administrative capacity, when she was asked to take part in a study concerning the future of computer-based supply systems. The assorted company of programmers and systems' analysts involved prompted her to break into an area of work that she hadn't previously considered. In 1984 she became a programmer - mostly in ICL Cobol and Quickbuild.

Nowadays she's as much at home with micros as she is with mainframes - whatever the situation at hand requires. 'As systems' analysts we have a say at each stage of the installation procedure, from procuring it and getting it up and running to training those who will be using it.'

We asked her how long the training generally takes. 'That rather depends on the scale of the project,' says Fiona. 'It can be a matter of days or weeks.'



Bath-based Systems' Analyst, Fiona Faulkner

Being a systems' analyst is nothing unusual in Fiona's department which now boasts quite a few lady analysts and programmers. Whatever the policy of the Civil Service regarding equal opportunities was in the past, there is certainly no evidence of any prejudice at work now.

Fiona really enjoys the personal contact that the job brings, although, like most things, this also has its down side; project-users continually changing the groundrules mid-assignment are her main bugbear: 'Chasing moving targets can be very frustrating,' she points out. 'But, on the other hand, it's really rewarding when you know that you are working towards a positive goal - especially when the people you are helping are enthusiastic about the coming changes.'

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# SUCK IT AND C

/\* Steve Patient contemplates the C language where all the comments look like this \*/

**W**hy C? Because it came after A and B of course. C is the language that laughed a thousand quips and a million bad puns, those weary figures of speech much beloved of journalists in search of hasty headlines. Unfortunately you've probably seen them all before, so we'll resist the temptation.

C is often touted as one of the most powerful languages to program in as well as one of the more difficult. This is a perfectly reasonable assessment though does not, it can be argued, entirely explain the fascination it holds for so many amateur — and professional — programmers.

If you've ever been tempted by Basic, or even looked at the listings, then you'll know that the essence of that language is that things are induced by issuing one command after another — one line after another — each one neatly numbered. There is much talk about modular programming and making use of subroutines, but very few people actually take that advice. In C it's very different, you have no choice.

All but the very simplest of C programs will consist of a list of functions; each function must have a unique name and can be called by any of the other functions. There are no line numbers and the only places programs can go to get their work done are these named functions. This makes writing a C program quite a different project from writing a Basic program. It also means that a great deal of the C code you write can be used in future programs.

Every C program has to contain the function `main()`,

from which it starts, though `main()` can come late in the actual listing. Note that C is always written in lower case letters. As a rule upper case is reserved for symbolic constants (those bits at the beginning where something is defined as something else.) You don't have to do it this way but you should, since anything that makes C easier to follow is a good thing.

## Point the way

When you call a function (A) from another function (B), you use the function (A) name, and put any variables, the values of which you wish to pass, inside the parentheses (which have to be there anyway). Unlike Basic, only copies of variables are passed (only one value can normally be returned) and the original variables remain intact.

The function being called also has parentheses in which passed values — if any — are echoed. The body of the function is then written inside curly brackets. Any internal loop or decision-making statement inside a function also has to be enclosed in curly brackets if more than one is involved. This can lead to visual confusion, so indenting statements is essential. That way it can be seen at a glance which pairs of curly brackets go together — or, more importantly, where you've forgotten to put one in.

If you need to change the original variable, you pass a pointer to it instead of the value itself — and it is at this point that new C programmers start to tear their hair out. Pointers in C are a simple enough idea to grasp — a pointer simply points at a variable — but they can be hard to get to grips with in the actual programs. Add to this the fact that you can have pointers to pointers, arrays of pointers, pointers to arrays of pointers and even arrays of pointers to arrays of pointers and you can see that there is room for confusion.

Because it is so easy to re-use functions in other programs, libraries are a big feature of C. At least one library always comes with it, `STDIO.LIB`. Since the C language specifies no means of accessing anything, no INPUTS or the equivalent, a library has to be written for every machine on which the language is implemented. This gives the programmer access to the keyboard, the screen, the printer and so on. Thus to do any input or output you have to call a library function.

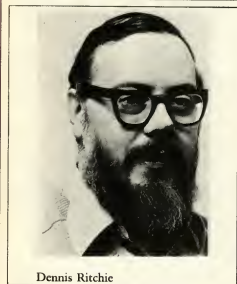
The simplest of these are `getch()` and `putch()` to input a keypress and display a character respectively. The library usually provides a lot of extra functions built up from these simpler commands. You can usually add to the libraries and edit them if you want to. You can also write your own libraries. One of the big advantages of doing it this way is that to port a program from one type of computer to another only the machine specific library functions have to be altered.

## Downside

Because C is usually very close in its actions to the underlying machine code of the machine, it confers a great deal of power on the programmer. C runs fast (if any) checks on the code you write, and mistakes in program logic can, and do, lead to spectacular crashes. When you work with Basic you actually have another program, `BASIC.COM`, looking after things and making sure your program can't do anything too silly; in C you're

## Clubbable

C is one of the few languages to actually generate its own fan club. There are C programmers' clubs all over the world. In England the people to contact are the C User Group (UK). They maintain libraries of C functions as well as a huge number of programs. So portable is the language that code written for virtually any machine can be adapted for most others. They publish a quarterly fanzine called C Yu and offer help and advice to those suffering from C sickness. Contact the membership secretary at CUG(UK), 64 Southfield Rd, Oxford, OX4 1PA.



Dennis Ritchie

## On DEC

In the early seventies, Brian Kernighan and Dennis Ritchie were working on a DEC PDP-11, an early mini computer with about the same kind raw computing power as a present day PCW, but with the kind of facilities more suited to running a business or laboratory (it supported multiple terminals for example).

They wrote the first version of C to run on the PDP-11 and followed it up by writing a book: *The C Programming Language*. This book, though lacking in the snappy title stakes, defines the language, explains the syntax and has lots of easy to follow examples as well as a very clean typography. It is well written and even has occasional flashes of humour. Though written with many references to the PDP-11, few books explaining any computer language have

achieved such lucidity and there is no doubt that the C Programming Language goes a long way toward explaining the popularity of C. There is now a new edition in print which anyone interested in the language should buy.

There are currently three good C compilers you can buy and one you can get free. These are as follows:

HiSoft C++	HiSoft	0525 718271	£49.95
Arnor C	Arnor	0733 68909	£49.95
Mix C	Advantage	0242 224340	£33.95
Small C	Public domain	CP/M User Group	Free

## Look C

on your own.

Once a C program has been compiled (turned into a COM file) it takes control of the PCW and is in a position to wreak software havoc on it. Because of the lack of compiler checks, this is more true of C than of almost any other language. It isn't surprising then that C programmers refer to the 'edit, compile, crash' cycle rather than the simple 'edit compile' cycle of other high level languages. This can be very frustrating and tends to lead to a more rigorous approach to program design - or insanity.

The upside of C's low level approach with all it's lack of nannying is that the C programmer can do almost anything he or she likes to the machine. Of course this is implicit in the language, which was intended for low level programming - you can't get much lower than writing operating systems (all right, yes you can. You can program disc drive controllers).

### Free sample

Writing in C can be very fast and efficient but there isn't room in a short article to demonstrate how to do it, so the C program in the box is one we prepared earlier. It's written in HiSoft C. This is undoubtedly one of the best for the PCW, though it lacks support for floating point maths and has a few odd features. Specifically, the first three lines of **main()** are very strange, and are required to make **argv** and **argc** work - these allow you to pass parameters from the command line when you invoke a C program.

The program **VIEW** is designed to display any file as if it were a text file. It takes complete control of the screen and attempts to format any input file as if it were text. Most real text files will print out as they should, including program files, and even LocoScript files are rendered readable. In fact it can be used to examine any kind of file, including COM files (it will show any text embedded in the file while everything else shows up as a dot).

The program has four functions: **main()**, **browse()**, **onepage()** and **linep()**. The first of these is **main()**, of course, which checks that the file you've named exists and opens it if it does (if it doesn't, it quits, and if you haven't named a file, it asks you to do so next time). It then calls **onepage()** which prints a single screenful of text (or whatever it decides is text) using the function **linep()** to output a single formatted line. After outputting a page, if the file is long enough, the function **browse()** is used to scroll through the document a line at a time with space bar. Holding the space bar down will scroll fairly rapidly, too fast to read. When the end of the file is reached, the program quits and displays the message 'That's all folks'; simple enough in use really.

In order to avoid spoiling the screen display with keyboard input, the HiSoft C function **rawin()** is used. This uses BDOS function 6 to get keyboard input without echoing it to the screen. Most C compilers will provide some equivalent of this function.

You will notice that HiSoft C requires libraries to be mentioned at the end of a program. This is a quirk you're unlikely to find elsewhere. Something you will find, though, is the need to use octal values in code. This is laid down in the original C reference manual though it looks odd these days.

C can be infuriating, but it's always fun. ■

```

/* VIEW - a nice utility to look at files by Steve Patient */
#include stdio.h          /* include library file */
#define EOF -1            /* physical end of file */
#define LMAX 88           /* maximum default line length */
#define QUIT 3            /* control c to quit */
#define CLEAR printf("\033E\033Y\040\040")
#define S_UP printf("\033Y\040\040\033M\033Y\075\040") /* this will home
the cursor - delete the top line and return the cursor to the bottom line */

static int c,ourc,num,cnum; /* declare global variables */
static int infile; /* pointer to fcb */

main(argv,argc)
int argc; int *argv[];
{FAST char argv_buffer[MAXARGS+2+132];
  cpm_cmd_line(&argc,&argv, argv_buffer);
  if (argc==2)
  { printf("The correct command is VIEW filename.type");
    exit(0);
  }
  CLEAR;
  *argv++;
  if (infile=fopen(argv,"rb")) /* if no file fopen returns zero */
  { onepage();
  }
  else
  { printf("\nSorry chaps, couldn't open that file\n");
    printf("*****THATS ALL FOLKS*****");
    onepage(); /* this function prints the first page then calls browse */
    { num=cnum=0; CLEAR;
      while (num < 29) /* not 30 as screen scrolls if line is too long */
      { S_UP; linep(); num++;
      }
      browse();
    }
    browse()
    { while ((ourc=rawin())!=QUIT && c!=EOF) /* control c - direct input */
      { if (ourc==32) /* space bar */
        { S_UP; linep(); /* go and print a line */
        }
      }
    }
    /* this function prints a line but only chars, CR and tabs */
    linep()
    { cnum=0;
      while ((c=getc(infile))!=EOF)
      { if (c == '\n')
        { return; /* if locoscript line separator ha ha */
          c &= 0177; /* and with decimal 127 */
          if (c >= 32)
          { putchar(c); /* put a char on a line */
            if (cnum++ > LMAX) /* end if line too long */
            { return;
            }
          }
          else if (c == '\015') /* end line if CR-octal 0D or 81 */
          { return;
          }
          else if (c == '\t') /* this is where we handle tabs */
          { cnum++; printf(" ");
            while (cnum <= 7 || cnum % 8) /* mod maths to space tabs */
            { printf(" ");
              if (cnum++ > LMAX)
              { return;
              }
            }
          }
          else if (cnum > 0) /* print a dot for all unknown values */
          { printf(".");
            if (cnum++ > LMAX)
            { return;
            }
          }
        }
      }
    }
  }
  #include "cpm.lib"
  #include "stdio.lib"

  /* All C programs need to be commented fairly heavily to avoid confusion
  when you return to your code at a later date. Anything between the pairs of
  slashes and asterisks is a comment and will be ignored by the compiler.
  However, you mustn't nest comments. Indenting code to show levels of
  activity is equally important and C cannot be read if this isn't done. */

```

### Uncalled for

Of those who come into contact with C few go away without strong feelings concerning it. Views tend to be polarised. Those who prefer strongly typed languages such as Pascal, complain that C encourages bad programming habits; others complain that it's a misnomer to call it a high level language at all. Perhaps the cruelest comment on the way C statements can be nested into unintelligibility, was that C is the world's first 'write only' language.

### Practical programming

C is a good language for working on large programming projects since it lends itself to a modular approach. One of the most famous products produced in C for the PCW is Mini Office. The first version was written in Mix C while the Plus version was largely rewritten in Amnor C.





# THE EXECUTIONER!

Tim Nott takes the lid off SuperCalc's black box

Sitting one day at your keyboard, a squeal of brakes outside heralds the arrival of the Minute Mansions super salesman. Enter Peter Patterwell, beaming. Not only has he a briefcase full of orders, which you accept with enthusiasm and gratitude; but also a well travelled Tesco bag, containing what he touchingly refers to as "This month's expenses. Bit of a mess, I'm afraid, but I'm sure you can sort them out with that computer thing of yours." You take the bag and shake out the mass of till receipts, credit card vouchers, tickets and scribbled notes, all in no order whatsoever and you hear Peter's Corgi GLS roar off in search of new conquests.

Although it is an easy matter to construct a spreadsheet that will total up, and sort into order such a mess of figures, you really need something better. If you could create a spreadsheet that loaded itself, accepted data entry, then took care of all the fiddly bits, such as calculating, saving and printing the results, then a complete computer illiterate

## Listing 1- the main spreadsheet, EXPENSE.CAL

```
A1 = ""
A2 = "Minute mansions- salesperson's expenses"
E3 = "Enter payments in any order, with the full date in the first row
E4 = "Thereafter only enter the day of the month
E5 = "Remember to precede text with a double quote [SHIFT 2]
E6 = "When you have finished, type an ampersand [SHIFT 7]
A7 = "-"
A8 = "Date"
A9 = "DD"
B9 = "MM"
C9 = "YY"
E9 = "Paid to"
F9 = "For"
G9 = "Amount"
A10 = "-"
A11 = 0
B11 = 0
C11 = 0
D11 = DATE(B11,A11,C11)
F11 = 0
G11 = 0
A12 = 0
B12 = IF(A12=0,B11,0)
C12 = IF(A12=0,C11,0)
D12 = DATE(B12,A12,C12)
E12 = 0
F12 = 0
G12 = 0
A13 = 0
B13 = IF(A13=0,B11,0)
Repeat for rows 13:25
A25 = 0
B25 = IF(A25=0,B11,0)
C25 = IF(A25=0,C11,0)
D25 = DATE(B25,A25,C25)
E25 = 0
F25 = 0
G25 = 0
A26 = "-"
F27 = "Monthly total:
G27 = SUM(G11:G25)
```

Minute mansions- salesperson's expenses

Enter payments in any order, with the full date in the first row  
Thereafter only enter the day of the month  
Remember to precede text with a double quote [SHIFT 2]  
When you have finished, type an ampersand [SHIFT 7]

Date	DD	MM	YY	Paid to	For	Amount
22	10	83		Red Lion Hotel	Lunch	16.54
14	10	83		Sid's stationery	Alifax Refill	17.63
13	10	83		Smother Garage	Petrol	17.63
14	10	83		British Bus Co	Season Ticket	52.49
15	10	83		McBoughnuit	Lunch	16.43
16	10	83		Inverness S/Str	Petrol	10.43
17	10	83		Arach Recovery Ltd	Indigestion tablets	4.50
18	10	83		Phil's Pharmacy	Governor's stay	35.50
19	10	83		Horsham Inn	Fare to station	5.50
20	10	83		Terry's Taxi	Car Wash	2.50
21	10	83		Carroll Motors	Photocopying	2.50
22	10	83		Sid's stationery	Photocopying	2.50
23	10	83		British Rail	Fare home	22.46
Monthly total:						
Form: 0						
Width: 3						
Memory: 28						
Last Col/Row: G27 ? for HELP						
Data entered, you are ready to return control to EXP.XQT.						

might be able to use it. Even, perhaps, Peter Patterwell.

What you need is a 'black box': a system where anyone can feed what they have (grass, coins, data), into one end, and obtain what they want (milk, chocolate, printouts), from the other end, without having a clue as to what the box contains or how it works.

Enter the eXecute command, which works in a very similar way to the CP/M SUBMIT command. It tells SuperCalc to take instructions from a file on disc, rather than from the keyboard. This can be invoked either by the /X command, or directly from CP/M: for example, typing SC2 EXP [RETURN] will load SuperCalc, look for a file called EXP.XQT, and take its orders from there.

Each line of the file contains exactly what you would normally type in at the keyboard. This can be text, figures, slash or other commands. An ampersand is used to transfer control between the .XQT file and the user.

## Cubic capacity

When creating black boxes, special care must be taken over formatting and the state of the various options available. So having created the usual start of day disc, load SuperCalc from the M drive, and do some formatting. Format columns A:C to 3 characters wide with /FC A:C [RETURN] 3 [RETURN]. Format column D to one column wide and hide it, with /FC D [RETURN] 1 H [RETURN]. Format columns E:F to a width of 20. Then type in listing 1, having first turned off the auto-recalculate function with /GM.

Listing 1 is very simple, but serves well to illustrate the power of the eXecute command. The formulae in D11:D25 convert the English style dates in columns A:C into a single date value that SuperCalc can understand. It is of no interest to the user, which is why that column is hidden. Enter this formula in D11, and replicate it through D12:D25. The formulae in B12:B25 and C12:C25 save the user the trouble of typing in the month and year each time. Enter these in B12 and C12, and replicate them through rows 13:25. This time, select the 'ask for adjust' option and choose N (no adjust) for B11 and C11.

The formulae will then go forth and multiply, with the result that the month and year entered at the beginning will be copied for each entry as long as the day of the month is greater than zero. Otherwise, the month and year will also be zero.

Type in the final formula, in G27, which adds the totals, and proceed to protect the formulae and headings with the /Protect command. Don't protect rows 3:7, as these are merely on-screen instructions. Enter a zero in all the empty data entry cells, i.e. all of row 11 except for C11, and columns A and E-G in rows 12:25.

Now create two user defined formats by typing /FD. A grid showing 8 possible formats will appear on the screen. On the first column, set 'zero as blank' to Y, 'decimal places' to 0, and everything else to N or 0. Do the same for the second column, except set 'decimal places' to 2. Type [ALT Z] to return to the spread sheet. Format columns A:F to user 1 (/FC A:F [RETURN] U1 [RETURN]) and

column G to user 2. All the zeroes will then disappear, smartening up the act somewhat.

Move the cursor to the right, to get the direction arrow pointing right then turn on the tab function with /GT. As we discovered last time, this takes the cursor to the next non-protected, non-blank cell after each entry. Save the spreadsheet to the A: drive as EXPENSE.CAL and clear the

\*\*\*\*\* Minute mansions - salesperson's expenses

Date	MM	YY	Paid to	For	Amount
10	09		Sid's stationery	Filefax Refill	1.60
10	09		McDonough's	Lunch	4.43
10	09		Phil's Pharmacy	Indigestion tablets	1.50
10	09		Wardlaw's	Overnight stay	2.50
10	09		Amper Garage	Petrol	17.35
10	09		Sid's Stationery	Photocopying	1.50
10	09		Caraffi Motors	Car Wash	1.00
10	09		Inverness C/S	Petrol	10.54
10	09		Red Lion Hotel	Lunch	10.54
10	09		Wreck Recovery Ltd	Tow in	40.00
10	09		Terry's Taxi	Taxi to station	2.00
10	09		British Rail	Fare home	22.46
10	09		Bristol Bus Co	Season Ticket	24.50
Monthly total:					191.15

The final result: SuperCalc's self-executing file takes the grind out of spreadsheet organisation

screen with the /Z(ap) command.

Listing 2 is not really a spreadsheet at all, but simply a list of instructions to the user. Type it in, with column C formatted to a width of 60. For a touch of class, format column B to a width of zero, and leave the cursor hiding there, with the direction arrow pointing vertically. Turn off the borders with /GB, and save this as A:INTRO.CAL

## Commanding presents

Having got the tedious bit out of the way, you can now concentrate on the .XQT file. This needs to be a simple ASCII file, and can be produced with LocoScript, RPED, your favourite text editor, or ED.COM, a utility provided on the Amstrad system discs for those who like a challenge. However, .XQT files can be produced with SuperCalc, albeit in a roundabout way. Zap the last screenful you did save it, didn't you?, and format column A to a width of 80. Type in listing 3, all in column A: note that each entry starts with double quotes, and any entry that is going to enter text into a cell starts with double double quotes. If you do use a different means to construct the file omit the opening quotes.

The lines in listing 3 may look like absolute gibberish, but they are, in fact, what you would type into the SuperCalc command line, without the interactive prompts that the program supplies. Line 1 would appear on the command line as /Load,INTRO,All, which is self explanatory. The solitary ampersand in line 2 passes control back to the keyboard, giving the user time to read the instructions in the INTRO file, before typing an & to hand back control to the .XQT file.

Line three then Zaps the intro, and you now should be able to figure out that the next three lines load the main spreadsheet, park the cursor at the starting point, and hand back control to the user. The user can then enter the data as per the on-screen instructions in rows 3-6. Having done that, typing another ampersand hands the reins back to EXP.XQT, which then performs a recalculation (!).

The next line contains a new slash command, /A(range), and tells SuperCalc to A(range) C(column) D, from rows 11 to 25 in A(ascending) order with N(o) adjustment of formulae. This is the column that contains the hidden Date value, so SuperCalc will sortall the transactions into chronological order. It would seem easier to do this by simply Arranging column A, without all the date business, but then SuperCalc would put all the zeroes at the top of the list. However, it treats date values in a slightly different way, in that a date of 0/0/0 is an ERROR. This doesn't bring things to a halt, but

SuperCalc will sort all the ERROR dates (i.e. empty rows) to the bottom of the list.

The .XQT file then D(eletes) R(ows) 3:7, so that the instructions do not get saved or printed, turns off the borders for a prettier printout, and sets up a prompt message in A25. It then invokes the S(save) command to drive A, and waits for the user to enter the filename, followed by an A, for All, then another ampersand. When the save has been made, .XQT regains control, B(links) out the prompt in A25, and finally O(utputs) the D(isplay)-All of it: to the P(rinter).

Turn off the borders with /GB (the .XQT file won't work with them on) and save this file twice; once in the usual way, as a .CAL file, which will enable you to reload it for editing if necessary, and then as a text file by /O(utput) D(isplay) ALL, D(isc). You will be prompted for a file name so enter A:EXP.XQT.

All that remains now is to finish the start of day disc. The PROFILE.SUB file should be altered to that in listing 4. When the disc is booted, the relevant files will be copied to drive M, SuperCalc loaded, and EXP.XQT run.

## User friendly

To use, sit Peter Patterwell at the keyboard. Show him how to insert a disc and how to load the printer. Switch on, put the start of day disc in the drive, and let him get on with it. When the .XQT file is doing its stuff, the screen leaps about in a rather startling manner, but fear not and wait until it settles down before trying to input data. A slight disappointment is that the keyboard doesn't come to life like a piano, but for £49.95 on an 8 bit machine you can't expect everything.

Hopefully, this gives some idea of what the eXecute command can do. It can also, inter alia, merge spreadsheets and invoke .XQT files from within .XQT files. Clever use of .SUB files, .XQT files and SETKEYS can produce a whole suite of bookkeeping programs, the only limitations being your ingenuity and the machine's memory.

## Listing 2 - the Introductory message, INTRO.CAL

```
C10 = "Welcome to the expenses reckoner
C12 = "Please check the printer is loaded with paper
C14 = "Remove the system disc NOW and insert the data disc
C16 = "Type an ampersand [SHIFT 7] to start
```

## Listing 3 - the EXP.XQT file

```
A1 = "Intro,a
A2 = "&
A3 = "zy
A4 = "Expense,a
A5 = "s11
A6 = "&
A7 = "l
A8 = "acd,11:25,an
A9 = "dr3:7
A10 = "gb
A11 = "a25
A12 = "Type in the month (Jan-Dec), then [RETURN] A [SHIFT 7]
A13 = "sa;&
A14 = "ba25
A15 = "odall,p
```

## Listing 4 - the PROFILE.SUB file

```
PIP
<M=A:SC2:[R]
<M=A:CAL[O]
<M=A:XQT[O]
<
M:
SC2 EXP
```

## Out of dates

The SuperCalc date functions operate between 01/01/00 and 12/31/2099, or in English, from 1st January 1900 to 31st December 2099. As well as displaying remarkable confidence in the product, this means that come the year 2000, you will have to enter the year in full, and can look forward to reformatting all those year columns.

## Dos & don'ts

SuperCalc will interpret any ampersand in an .XQT file as 'return control to keyboard'. Don't, therefore, try to enter a prompt line such as 'Insert disk & press RETURN' from an .XQT file - it will grind to a halt.





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Page 2



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# BEHIND CLOSED DOORS

September's feature on the secrets of Locomotive Software prompted our ace reporter to detach himself momentarily from the bar and investigate the software company which is possibly the most obscure in the world: Ansible Information Ltd.

Ansible began life in 1984, and again in 1985, 1986 and 1988. For a company which has had no effect whatever on the working habits of nearly four billion people, its offices are surprisingly grandiose, consisting of two crumbling Victorian slum houses 45 miles apart. Asked how they can afford such palatial premises, head programmer David Langford quipped, "We can't, but we have to sleep somewhere."

Besides its basic commitment to unpronounceability, Ansible, as originally envisaged by chairman Christopher Priest, was to provide software solutions for unknown, obsolete computer systems which nobody owns or buys any more. "While stealing computer time in the Oxford nuclear physics department, I learned to program an IBM 1130 by punching the cards with my teeth," explained technical director David. "Unfortunately this skill was less viable than hoped in the home computer market."

Ansible's first commercial project was a system of pop-up menus which might have been a great success if restaurant owners hadn't objected to having slots sawn in their tables for the installation of this simple, spring-loaded device.

What complementary skills did production chief Christopher bring to the company? "By then I'd written several highly praised though unremunerative SF novels in which shifting realities and hallucinatory narrative established a dreamlike state where no fact or interpretation seemed reliable. This left me ideally qualified to write industry-standard instruction manuals."

## Off the hook

How did Ansible enter the Amstrad market? Secretarial scapegoat David explained: "As SF writers, we used to be forced to look at friends' terrible, badly-typed, unpublishable novel drafts. Then

we noticed a change: more and more we were seeing terrible, unpublishable novels smartly produced on PCWs! This was an obvious pointer. Also, we had this idealistic notion about making obscene sums of money."

An early Ansible product was the TYPO program, which could be run against LocoScript documents to introduce random spelling errors, misaligned letters, etc., thus catching the eyes of editors who'd grown bored with excessively perfect word-processed scripts. But these were early days for Ansible, and TYPO was withdrawn owing to a slight bug which in its first releases (up to version 4.79) could cause PCW monitors to explode.

Is the computing world anything like the directors' former haunt of SF writing? "Oh yes," replied switchboard operator Christopher. "The combination of good reviews with low profits and huge tax demands is very nostalgic. We keep sales down partly by writing software for obscure jobs no one wants done — like indexing — and partly by our policy of not answering the phone."

Our reporter was shown around Ansible's trophy room, and peered with revulsion into the glass case containing more than 47,000 pin-mounted bugs from early programs. On the wall are framed letters from computing giants Locomotive, WordPerfect Corporation and many more, all telling Ansible to watch it if they don't want to get sued.

Is it possible to include Ansible Information's fabulous lack of success? "I put it down to beards," commented tea-boy David. "In big-name software houses, male staff have peculiarly irritating beards — look at that horribly hirsute lot at Locomotive. Unfortunately my wife won't permit such a drastic revision of our public image."

We followed the Ansible team through a complete day's work, beginning with intensive hours of oversleeping. Software boss David expertly showed how five minutes of making random changes in a program can quite often move the bugs around a bit, while public relations maestro Christopher shouted down the phone at multi-million-pound companies who as usual wanted a



A page in  
the company  
of author and  
PCW pundit  
David Langford

LANGFORD

£29.95 software package but claimed total inability to write a cheque for such a huge amount in less than six months.

## Too far gone

After a long discussion about the percentage of HM Inspector of Taxes in the company's nearby boardroom, known as The Plasterers' Arms, the mailroom supervisor (Christopher) and philatelic salivation operative (David) gave an exciting demonstration of how on a busy day Ansible often mails out enough software parcels to be counted on the thumbs of both hands.

Of which of its achievements, then, is Ansible most proud? "Our manuals," insisted technical authorship co-ordinator Christopher. "We print fewer split infinitives and maintain a higher level of semicolons than almost any other doomed company of comparable size based in Reading."

"I'd say our support service," contradicted customer liaison assistant David. "Within weeks of

receiving a routine letter of complaint or death threat, we rush back a full explanation that the bug in question only appears to be so because they've misread the manual, and in fact doesn't exist, being instead a valuable feature requested by thousands of past users, which in any case results from flaws in CP/M or Amstrad's hardware."

Why the name Ansible? "We wanted the software to go over so fast," said nomenclature supervisor Christopher, "so we stole the name of the fastest thing in SF, the instantaneous communicator in the novels of Ursula Le Guin." Only later did they discover that it's an anagram of "tesbian", which amuses their customers greatly and frequently.

Asked whether PCWs were used to prepare the manuals for their PCW software, both members of Ansible's product documentation section shuddered and said, "Do you think we're mad? What do you use to produce 8000 Plus, eh?" Our reporter made an excuse, collected his mac, and left.

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# LISTINGS

Sines, sport and messages scrolled. Write 'em and smile.

## FRENCH BOWLS

By Noweed Mubarak

What with the proximity of 1992 and all that we felt it was about time to go continental. As if by telepathy Noweed Mubarak came forward with this stab at French bowls or Boules as it is known abroad. The listing is short, to the point and one of the simplest yet possibly most addictive we've seen in some time.

The idea of the game is to throw a ball at an angle of between 20 and 90 degrees. Your computer arm is given a power rating or between 1 and 10. If you decide to change the angle after inputting it merely enter a power greater than 10. Both choices are then reset to zero and you start again. Points out of ten are

scored depending upon how close you get your bowl to the jack.

You have five attempts to hit your target. At the end of each 'session' a percentage and points rating is given. The author assures us that a 100% score is possible. With each new game the jack is placed at a different distance from the player. The rest is up to your skill and judgment.

Because of the brevity of the listing, we prefer them that way as it happens, quite a few additions can be made in order to spruce

it up. For example, as soon as you finish one round of five balls the program ends and you are forced to type RUN for a new game. The addition of an option to continue might be of help. If you wanted to be really clever you might like to add wind speed and direction effects or the brave among you could even program a slope on the playing area.

Aside from these suggestions French Boules is an shining example of the enjoyment which can be achieved with just a very few lines of Basic and a PCW.

Score : 6  
ANGLE : 20  
POWER : 8



For the cold winter nights, a summer game to refresh the memory.

```

10 REM      ** PCW French Bowls **, by Noweed Mubarak
20 ns=0:ms=CHR$(27)+CHR$(1):zs=CHR$(27)+CHR$(4)
30 PRINT CHR$(27)+"E"+CHR$(27)+"Y"
40 DEF FNat$(x,y)=CHR$(27)+"Y"+CHR$(x+32)+CHR$(y+32)
50 a=PEEK(64504):RANDOMIZE a:PRINT FNat$(25,0)STRING$(90,95)
60 PRINT FNat$(24,1)+"e":FNat$(25,0)CHR$(144);
70 PRINT CHR$(143);CHR$(144);FNat$(26,1)CHR$(133)
80 t=INT(RND*80)+5
17A1
11D7
0B69
137A
1BB6
1410
1392
07BA

```

Each of the graphics characters are defined, for example the player's bowl is CHR\$(27)+CHR\$(1) in line 20.

```

90 PRINT FNat$(26,t)CHR$(27)+"r"+z$CHR$(27)+"u":FNat$(27,t)CHR$(94)
100 FOR go=1 TO 5:PRINT FNat$(0,0)"Score ":"ns:n=0
110 PRINT FNat$(1,8)SPC(5);FNat$(2,8)SPC(5)
120 PRINT FNat$(1,1);:INPUT "ANGLE ":"d:INPUT " POWER ":"s
130 IF s<1 OR s>10 THEN 110
140 IF d<20 OR d>90 THEN 110
146F5
16B9
1298
1A37
0AC5
0B05

```

The user defined function FNat\$ is put to good use in setting up the playing area. You are asked for the details of your throw.

## LISTINGS PLUS

```

150 x=(n*(90-d)*s/2/42.6)+3:y=INT(SIN(n/100)*d*s/2)/17
160 IF y<qw OR x<wq THEN PRINT FNAts(25-qw,wq) "
170 IF 26-y>26 THEN PRINT FNAts(26,x):ms=GOTO 190
180 PRINT FNAts(25-y,x):ms;qw=y:wq=x:n=n+5:GOTO 150
190 sc=10-(ABS(t-INT(x))):IF sc<ABS(sc) THEN sc=0
200 ns=ns+sc:NEXT go
210 PRINT FNAts(15,20)"You're score is: ";ns;" ,average: ";ns/2;"%

```

The trajectory of the bowl is calculated in line 150 and you get to see just how close you got.

# LISFIG

By H F J Callan MBE

French mathematician Jules Antoine Lissajous grabbed the fame in the late 1800's from American Nathaniel Bowditch. The latter had first discovered what came to be known as Lissajous figures. Jules Antoine, however, delved just that bit more deeply. Now you will be able to see the shapes which fascinated both men come alive on your monitor.

Lissajous figures are produced by the intersection of two sinusoidal curves (the curve of sines represented as  $(y=a \sin x)$ ) the axes of which are at right angles to each other. This program reproduces Lissajous figures in which the relative frequencies and phase angles may be set.

In laypersons' terms the program produces some very attractive patterns on the screen of the PCW. It enters the pantheon of Mallard Basic listings which bring numbers to life alongside the Mandelbrot generator and A M Baldwin's Surfaces program. Many regular readers of *Listings Plus* will recognise Larry Simons' Plot routine which begins in line 50000. If you already have this you only need type in lines 10 to 290. Those of you new to these pages should type the whole program but the bonus is that once you have the Plot routine you can re-use it for your own ends.

Mr Callan gleaned his knowledge of these interesting curves from his work as an electrical engineer where he spent time working with oscilloscopes, sine waves and such like. He tells us that he has more such programs in the pipe line.

The present program will produce its shapes in a few minutes, if not seconds. So other programs may well benefit from graphics in the form of Lissajou figures without much loss of speed.

Setting the frequency ratio to 1 and the phase displacement to 90 should give you a circle, 1 and 180 will give a diagonal line. But changing the parameters even slightly will light up the screen with fabulous creations. The program itself is cleanly laid out and was accompanied by detailed documentation....just the way we like it.

Initial phase displacement  
between frequencies in degrees....? 90

Do you want another figure? Y or N

For the cold winter nights, a summer game to refresh the memory

```

10 REM LISFIGS.BAS by H F J Callan MBE
20 pi=.3.14159
30 es=CHR$(27):c$=es+"H"+es+"E":c$=es+"f":r$=es+"e"
40 GOSUB 50000:PRINT c$:H:PRINT:PRINT:GOSUB 220
50 a$="":PRINT c$:c$="":f$=1:flag=0
60 PRINT"Enter 2nd frequency to first"
70 INPUT"(e.g. 1=same freq; 2=twice freq....)? ",f
80 PRINT:PRINT"Initial phase displacement"
90 INPUT"between frequencies in degrees....? ",z

```

Well packed code. The machine code routine is set, the clear screen and cursor-on/cursor-off are defined and user inputs are accessed.

```

100 ad=z*pi/180:a%=5
110 r=a%*pi/180
120 x%=120*SIN(r)+320:y%=53*SIN(f*r+ad)+120
130 IF flag=0 THEN GOTO 180 ELSE 140
140 IF a%>360 AND x%=c AND y%=d THEN 190
150 GOSUB 170:a%=a%+1:GOTO 110
160 PRINT c$,r$:END
170 CALL plot (x%,y%,f%):RETURN

```

This is where the lines you will see on the screen are plotted. The Lissajous figure is positioned in the middle of the screen by line 120.

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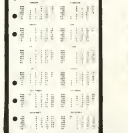
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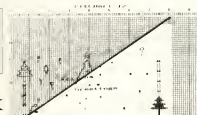
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```

180 c=x%:d=y%:flag=1:GOTO 150
190 PRINT:PRINT:PRINT"Do you want another figure? Y or N
200 WHILE as="" :as=INKEY$:WEND
210 IF as="Y" OR as="y" THEN 50 ELSE 160
220 PRINT:PRINT TAB(25)"Program to produce Lissajous figures
230 PRINT:PRINT:PRINT TAB(30)"Press any key to continue.
240 WHILE ds="" :ds=INKEY$:WEND:IF ds<>" THEN RETURN

```

0DAD  
 2219  
 0D96  
 0F00  
 22A8  
 2321  
 1862

The Plot routine which is set up by the machine code is called by the program in order to display the sinusoidal curves on the screen.

```

50000 MEMORY &HBFFF:plot=&HC000:a=plot:e=0
50010 RESTORE 50100
50020 FOR f=0 TO 14:s=0
50030 FOR g=0 TO 7
50040 READ x$:x=VAL("&H"+x$)
50050 e=s+x:POKE a,x:a=a+1:NEXT:READ x$
50060 IF s<>VAL("&H"+x$) THEN e=e+1:PRINT "ERROR IN LINE";10*(f+5013)
50070 NEXT:IF e=0 THEN RETURN
50080 PRINT e;"ERROR";:IF e=1 THEN PRINT ELSE PRINT"e"
50090 STOP

```

1461  
 079D  
 08EC  
 06C7  
 0A18  
 12A8  
 1DF0  
 0E7A  
 19A3  
 03FE

This section of the program checks to see whether you have typed the machine code in correctly and then creates Plot itself.

```

50100 DATA 0A,32,7C,C0,4E,23,46,21,250
50110 DATA CF,02,A7,ED,42,D8,ED,43,4AF
50120 DATA 78,C0,EB,5E,23,56,7A,A7,41B
50130 DATA C0,93,3D,5F,ED,53,7A,C0,469
50140 DATA F3,ED,73,7D,C0,31,9D,C0,51E
50150 DATA 01,36,C0,CD,5A,FC,E9,00,403
50160 DATA ED,7B,7D,C0,FB,C9,2A,7A,50D
50170 DATA C0,29,11,00,B6,19,5E,23,24A
50180 DATA 56,7B,B6,F8,CB,27,CB,12,47E
50190 DATA 47,7B,B6,07,B0,5F,2A,78,360
50200 DATA C0,45,7D,E6,F8,6F,EB,19,4D3
50210 DATA 78,56,07,3C,47,AF,37,1F,2ED
50220 DATA 10,FD,47,3A,7C,C0,A7,20,391
50230 DATA 05,78,2F,A6,77,C9,3D,78,347
50240 DATA 20,03,B6,77,C9,AE,77,C9,407

```

0B50  
 0CEF  
 0CA4  
 0C66  
 0C7D  
 0C54  
 0D45  
 0AF6  
 0C50  
 0BED  
 0CB2  
 0CDB  
 0BDC  
 0C1F  
 0C16

Not a great deal to say about all this code except that you have to get it right or it won't work. Once you have it you can use it again and again.

## How to type in Listings

First get Mallard Basic running. Put a copy of your CP/M system disc in the drive and type BASIC at the A> prompt.

BASIC has been loaded when the A> disappears to be replaced by ok. Now you're ready to type the listings as they appear line by line. Don't bother with the four figure hexadecimal numbers which appear at the end of each line; these are check digits (generated by the Check2 program in issue 37).

Once you've finished typing a line check it for typing errors.

When you're certain everything is correct press [RETURN]. Use the cursor keys and [DEL] to alter a line if there are mistakes. If you spot an error after you've moved on you can type EDIT followed by the line number. Edit the line using the cursor keys and [DEL] as usual. Press [RETURN] and the altered line will be

accepted in the corrected form.

When you've finished typing the program you should type LIST. This will print the listing on the screen. If you want a paper copy, type LLIST. Now, think up a file name such as "a-LISFIG.BAS". The a, at the end tells Basic to save the program in ASCII form. The filename should be no longer than eight letters. To save your program type SAVE followed by the filename you chose.

The next thing to do is type RUN. If the program runs first time you're in luck. If not, don't worry, it happens to us all. Basic will probably give you an error message with a line number. This might not be the exact line but it will narrow down the search. If all else fails - read the manual.

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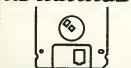
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# SCROLL

By D Watson

**S**croll is another of those handy little tools which brighten up other listings. While queuing in the post office you may have seen one of those machines which

sends a message skidding across a thin screen. This in essence is Scroll.

The idea is useful and the execution tight. You end up with a small 'window' in the middle of the PCW screen. Across this travels a message of your choice. The message itself can be up to 255 characters in length. This restriction relates to the maximum length of a string variable in Mallard Basic.

Happily, Scroll is not one of those programs which requires you to slam the [STOP] button in order to curtail its activities.

It makes use of the INKEY\$ function in order to escape its interminable scrolling. Once again this is more a program to be included in others. You might like to merge Scroll with the French Bowls listing to provide the latter with an escape routine which announces your score!

HING IS FUN FOR EVERYONE...EVERY

Your name in lights at last? Well pixels actually but they keep on going for as long as you require.

```
10 REM ***** Scrolling title2 routine D. G. WATSON *****
20 PRINT CHR$(27)+"E"+CHR$(27)+"f"
30 INPUT "What is your message ";a$
40 PRINT CHR$(27)+"E"+CHR$(27)+"f"
50 x=25:y=15:d=40
60 l=LEN(a$)
```

1A11  
0F3B  
1140  
0B3F  
0667  
0486

Nothing too complex here. The screen is cleared, your message requested and the box is for the scroll is defined.

```
70 WHILE INKEY$=""
80 a$=RIGHT$(a$,l-1)+LEFT$(a$,1)
90 b$=LEFT$(a$,d)
100 PRINT CHR$(27)+"Y";CHR$(32+y);CHR$(32+x);b$
110 FOR a=1 TO 100:NEXT
120 WEND
130 PRINT CHR$(27)+"e":END
```

082F  
0AF0  
0576  
11F4  
0A9C  
03EF  
09BA

The PCW awaits your command. INKEY\$ can keep it or kill it. The message is parceled up for printing in lines 80 and 90.

This month we are looking at the rather strange but useful LEFT\$, MID\$ and RIGHT\$ functions. The main purpose of these is to extract a defined number of characters from a string of characters; which can be a word or group of words (a string expression). Before diving deeper into the explanations you should get Basic running and type in this short listing:

```
10 INPUT "What is the date (DD/MM/YY)";date$
20 PRINT "The day is "LEFT$(date$,2)
30 PRINT "The month is "MID$(date$,4,2)
40 PRINT "The year is "RIGHT$(date$,2)
50 END
```

We'll look at the program line by line.

**Line 10:** Simple enough. It asks you for the date. Make sure that the slashes are in the right place and that numbers such as nine are entered as 09.

**Line 20:** We see how the LEFT\$ function extracts the first two (leftmost) characters from the date. It needs to know which string to get it from, in this case the variable date\$. It also needs to know how many characters to be extracted. So we tell it take the first two. LEFT\$, always reads from left to right.

**Line 30:** This is MID\$ in action. Slightly more data is required by MID\$. Because the variable might be any length from one to 255

characters MID\$ needs to know where to begin extracting; in this case the fourth character from the left. We then tell it to extract only the following two characters.

**Line 40:** RIGHT\$ does its job in a similar way to LEFT\$ but this time reading from right to left. As you see it takes the first two characters from the right.

**Line 50:** This finishes the program.

Once you have seen what the three functions can do you might like to play around with the number of characters they will take. Do this by altering the numerals in the brackets. In the case of a database the ability to look for key letters rather than whole words can be invaluable. To illustrate this point and to introduce you to next month's topic which will

be DATA, type in the following and run it in Basic.

```
10 INPUT "What initial do you require ";i$
20 FOR Initial=1 TO 5
30 READ b$
40 IF i$=LEFT$(b$,1) THEN PRINT b$
50 NEXT Initial
60 DATA
HANK,HARRY,FRANK,LARRY,FERGUS
70 PRINT "That's all folks ":END
```

Once you get it running you will see how the search is achieved using LEFT\$ in line 40. The first letter of each name is checked against the letter you put in and if there is a match the whole name is printed out. Don't forget to check out the Learning Curve next month.

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**Tip** **Offs**, information technology at its very best. Why? Because you get the information which adds to your technology. This month we bring you posters, printers, Protex and passwords among a plethora of others. If you have a tip or even a question then we have a few pounds, sterling that is, of incentive, to write, that is. The astute recipients this month are, Sue Jones for her LocoScript grids and Nick Morice-Jones for his Stop Press pixel pointers.

## The great escapes

**T** You published a letter from B. Priestly of Slough about getting the PCW to pause and/or clear screen whilst running SUBMIT files. He

advocated writing programs to do this and then incorporating them in your PROFILE.SUB file. Although this works there are CP/M dodges you can use instead. Clearing the screen is very easy indeed. All you do is include the following line:

**[E^]H**  
The arrow is obtained by **[EXTRA]+U**. The PCW interprets the two characters **^** as a single ESCAPE code. CHR\$(27) in Basic does the same job. Both characters can in fact be obtained by pressing the **[EXIT]** key. Mr Priestly suggests writing this in Pascal but with the Turbo version the minimum COM file size is 8k. This will do it in 1k!

If you would like to make your existing SUB files clear the screen here's how to do it. Using PIP.COM type the following:  
**PIP F.SUB=CON: ,PROFILE.SUB**  
The section before the comma reads anything typed in at the keyboard to F.SUB. The section

following adds this new file to the beginning of your present SUB file. Remember that when entering information directly from the keyboard into a file using PIP.COM you are unable to delete. So type the following line in with care:


Then type [EXTRA]+Z to finish. Pausing the PCW is a little more complex. SUBMIT.COM allows user input for information such as dates and user group changes.

If it prompts for information which is not supplied, the PCW will stop until it is. By prompting for the user number in a SUB file we can pause the machine:

```
;Test file for SUBMIT.COM
^[E^[H
;Sorry about the ?
;[RETURN] when asked for User
use $1
; Here is an another.
Use $2
;end.
```

It should be noted that anything typed after the ; will be printed on the screen. Aside from this each line is treated as a command.

**Robert Milne**  
**Twickenham**  
**Middx**



## Dr Johnson's joy

**Q** I'm very pleased with my PCW9512 except for one snag. As hard as I try, I just can't update my User Dictionary. I'd be very grateful if you could help me out with this one.

Anne Cherchian  
London

**8000 PLUS** Upkeep of the LocoScript User Dictionary is simple. Here's how:

1. Create a document.
2. Press F7 to bring up the LocoSpell menu.
3. Move the cursor to the bottom of this

[illegible]

The screenshot shows a DOS command prompt window. The command entered is 'F:\F11.BAT'. The output of the command is 'User dictionary upkeep. Printer info. Using M:'. The prompt is 'C:\>'.


[illegible][illegible]

The screenshot shows the Emacs editor with a C program open. The program defines a function `center` that prints a line of text centered on the screen. The text to be centered is "The word hands had preceded hex. Pressing [ ] puts it into the box. Pressing [ ] again deletes it." The function `center` uses a loop to calculate the number of spaces to print before and after the text to center it. The program also includes a `main` function that calls `center` with the text "The word hands had preceded hex. Pressing [ ] puts it into the box. Pressing [ ] again deletes it." and then prints "The word hands had preceded hex. Pressing [ ] puts it into the box. Pressing [ ] again deletes it.".

The symbol table on the right shows the following symbols:

- `center`
- `main`
- `main:1`
- `main:2`
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- `main:7`
- `main:8`
- `main:9`
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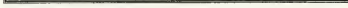
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
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## Drawing on experience

**T** I am responding to Nigel Buckerton's query in issue 36 (September 1989) regarding the use of non-PCW printers and GSX. I use an Epson LQ850 24 pin printer in nine pin mode with no problem using the GSX printer driver DDFXHR8.PRL. The following steps should allow anyone to use a 24 pin printer with any GSX compatible functions such as DR Draw and DR Graph. Do remember to work with backups when using SID.COM.

Load CP/M and copy the files SID.COM and DDFXHR8.PRL to drive M. Then:

1. Set the default drive to M.
2. Invoke SID.COM.
3. At the # prompt type

EDDFXHR8.PRL to edit this file.

4. You will see these lines:

```

NEXT MSZE PC END
3C00 3C00 0100 DAFB

```

5. With the return of the # prompt type: SW1C46 this is the Substitute Word command and sets the first address to Hex 1C46. As each address is shown, the value currently held there will be displayed. You simply type in the new value and press

[RETURN] or simply [RETURN] if you don't wish to alter anything. Type a full stop to finish. The full list of addresses, current values and substitutions is as follows:

```

1C46 0557 473
1C48 00D4 [RETURN].
1C4A 00B0 D4
1C4C 0000
#W24PIN.PRL

```

0076h record(s) written.

Copy the new file 24PIN.PRL to disc using PIP.COM and finally edit the GSX file ASSIGN.SYS to replace the driver DDFXHR8.PRL with 24PIN.PRL. You can use RPED.BAS, LocoScript or any text editor to do this. Once this is done you have a 24 pin compatible system.

Michael Gorman  
Guildford  
Surrey

GUILDFORD  
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This can be achieved with GSX and some effort.

## Code comfort

**T** For some time I have been interested in Z80 assembler language for the PCW. I have read the articles published in 8000 Plus which recommended various assembler/disassembler programs. However I can't seem to find the following information:

1. A book containing the full Z80 machine code set.
2. A full PCW memory map.
3. A complete guide to CP/M showing its resident place in memory.

Nigel Buckett  
Marchwood  
Hants

**8000 PLUS** Literature on Z80 code is widely available. Some of the most highly recommended are:

- 1) The Amstrad CP/M Plus by Andrew R M Clarke and David Powys-Lybbe. Published by MML Systems Ltd, 11 Sun Street, London EC2.
- 2) Programming the Z80 by Dr Rodney Zaks, published by Sybex at £23.95.
- 3) PCW Machine Code by Michael Keys. For details of this see A New Recruit.

## It'll RUN and RUN

**T** Some hard won ideas in Basic:

1. Save your programs in ASCII using the syntax: SAVE "MYPROG".a. Then when you want to list one program while writing another all you need to do this: TYPE MYPROG.BAS. By the way in this second command there are no need for quotation marks.
2. Here's a trick to pause a listing or give your finger a break while zapping aliens; Pressing [PTR] will freeze most programs. To get back to what you were doing just press [EXIT].
3. To abandon printing press '[STOP][PTR][STOP][EXIT]'. This stops the printing and ensures that the printer buffer is empty.
4. If you like printing out long program lines the following will stop Basic from inserting extra carriage returns: WIDTH LPRINT 255. You could save this as a program on its own with a name like W.BAS. Then use

SETKEYS.COM to call Basic W.bas with one of the function keys [F1], [F2] etc. If SETKEYS is a bit beyond you then simply put W.BAS into your PROFILE.SUB.

5. If you have margins set at say positions 5 and 79 typing the following will show on screen how it should look on paper: WIDTH 74. Typing WIDTH 90 will return the screen to normal.
6. When debugging a program there are a number of ways to avoid deleting lines or files by mistake. Save things temporarily on M:. Don't delete a dubious line, instead put a REM statement at the beginning. Finally if you do need to move lines just give them a number like 10000 and move them to the end of the program. As long as you have typed END before this line you will be all right.
7. Arrow left on the keypad will repeat the last line written.
8. To write a similar line to one already in the program use EDIT. Changing the line number doesn't effect the original and it also gives you a duplicate.

Steve Mayer  
Poole Dorset

## A new recruit

**Q** Having recently switched from the CPC to the PCW I have a few questions. Is there any way of protecting a program in Basic so that no one else can list it?

In Basic when I print a listing on continuous paper I still get the 'Waiting for Paper' message from the command line. I have tried changing the Paper Out Defeat but this doesn't appear to work. What can I do?

I would like to know if there are any books which deal with graphics on the B256. Do you have to use GSX to build routines and merge these with Basic programs?

John Sunderland  
Nelson  
Lancs

**8000 PLUS** Protecting Basic listings is simple. All you need to do when saving the program is this: SAVE "PROB.BAS".p. The p following the comma stands for protect. Once done anyone trying to examine your listing will be confronted by the message 'Improper argument'. The only problem with this is that you won't be able to list them yourself!

To avoid the 'Paper out' message all you need to do is use PAPER.COM in CP/M. Include this line in your PROFILE.SUB file: PAPER C.

The graphics package, GSX is a complicated system fit for games with plenty of time as well as a great deal of patience. You have to write GSX routines and merge them, as well as going through an initialisation routine which creates a customised BASICGSX.

For some people this can be fun and GSX will certainly add to Basic, however, GSX is slow and rather cumbersome. This probably accounts for the fact that very few other packages are compatible with it.

One piece of software of interest is 'All You Ever Wanted to Know about Graphics the Universe and Everything on the PCW B256-B512 But Were Afraid To Ask. This will set you back £24.95 from CP Software and contains some powerful graphics tools; not only that, it's also quite fast. Phone them on (0993) 823-463.

You might also like to make use of the Plot routine printed in Listings this month or the more detailed Draw routine published in issue 33.

As far as books are concerned 'The CP/M Plus Handbook' published by Heinemann and priced at £14.95 has a GSX supplement.

Finally, we can also strongly recommend Michael Keys book 'PCW Machine Code' which has two chapters devoted to graphics.

It is available at £15 from Spa Associates who can be contacted on (0937) 843-855.

## Make a date

**Q** Could you please tell me how to access DATE.COM from Basic? I use DATE.COM to date and time-stamp files. When I use Basic I have to enter the date again. Calling up the time is no problem but I can't call up the date in Basic. It must be hiding somewhere in memory. If you could help I would be very grateful.

**P S Haynes**  
Tufflev Gloucester

**8000 PLUS** The default date for the PCW is January 1st 1978. You can change this with DATE.COM but remember it needs to be altered everytime you turn the PCW on. If you decide not to bother doing this all files which are set up for it will be date-stamped as if they were created in 1978.

To set up a disc for time and date stamping you have to use two CP/M commands: INITDIR.COM, which means Initialise Directory, and SET.COM.

You initialise a disc, in this case in drive A:, with the command:INITDIR A:.

Once done you are ready to SET it up for

stamping. Do this as follows: SET A:[create=on. From now on the date and time at which a file was created will be logged onto the disc. Two other options are available:[ACCESS=ON] and [UPDATE=ON]. Remember that ACCESS and CREATE are mutually exclusive. To check this has worked use DIR.COM like this. DIR/full

As for accessing the date from Basic we would like to introduce an element of competition to these pages. We will provide you with the address at which CP/M stores the date. We are offering £5.00 to the person who can come up with a Basic listing to get the information on screen in the format 1 Jan 1978 - for any date. The winner will be the one that best combines brevity with elegance.

Right, the address is in normal Z80 high-byte/low-byte order at 64500 and 64501. The integer held there is the total number of days between January 1 1978 and the current date. You get the information with the Basic line:

```
PRINT (PEEK(64500)+PEEK(64501)*256))
```

From then on it's up to you. The crisp blue fiver is available at the usual Tipoffs address but please mark your envelopes 'Make a Date'.

could be, it's all too much trouble.

If you just need an occasional symbol or symbol string – a Greek name perhaps – it makes more sense to put it into a phrases file. Then all you have to do is [PASTE] in the required character when the time comes. To turn this into a phrase, cursor to the beginning press [COPY], go to the end and press [COPY] again and when the menu appears select the letter of your choice. To make it permanent go to the disc manager screen, press [F1] and select Save all phrases.

**G Wittenberg**  
**Middlesex**

[illegible]

```

EMITDIR WILL ACTIVATE TIME STAMPS FOR SPECIFIED DRIVE.
Do you want to re-format the directory on drive: B (Y/N)? Y
R>

```

CP/M allows you to change a dull directory into one set up for date and time-stamping using INITDIR.

[illegible]

Having used SET.COM and INITDIR.COM all your files will be automatically stamped from now on

## Symbolic logic

**T**he T<sub>1</sub> and T<sub>2</sub> fonts of the TeX system have hundreds of symbols only a few of which are shown on the keyboard itself. In order to enter a special character into text you may have to use [EXTRA],[ALT] or [SHIFT], sometimes in combination, along with a standard character. Sometimes the whole keyboard has to be put into Superfish and then reset. Symbols and other special characters, useful as they are, are not used as much as they

could be, it's all too much trouble.

If you just need an occasional symbol or symbol string – a Greek name perhaps – it makes more sense to put it into a phrases file. Then all you have to do is [PASTE] in the required character when the time comes. To turn this into a phrase, cursor to the beginning press [COPY], go to the end and press [COPY] again and when the menu appears select the letter of your choice. To make it permanent go to the disc manager screen, press [F1] and select Save all phrases.

**G Wittenberg**  
**Middlesex**

**Footer, it's a funny  
old game**

**Q** I wonder if you can help me with a problem I have with my 8512 and LocoScript 2.2? When I decided to head and foot a document the following occurs: I press [F1] to go into the Document Setup screen. I type out my header line with no trouble. Then I go into the footer zone and then the trouble starts. I add a copyright symbol using [ALT]+C but I also want to add SuperScript


I press **[+]** S and the cursor vanishes!

Pressing [CAN] or [EXIT] does no good so eventually I have to remove the discs and begin again. No matter how quickly I switch back on, all my work has gone. Is this a problem of which I am not aware and can it happen again with another combination of keystrokes?

**Nick Cooper**  
London NW6

**8000 PLUS** We tried and failed to simulate this aberration on several versions of LocoScript. So it appears that

### True grid

 Anyone want hexagonal grid paper for mapping wargames, postal games or even patchwork bedspreads? It can be done in LocoScript and printed out on 8000 machines.

Start with a base layout of Pitch 12 and Line Pitch 6. Make sure there's plenty of room on disc as a full A4 page will need 16k to 20k. With the printer Codes showing ([f1] in LocoScript 1, [f8] in LocoScript 2) Type in the following lines (the backslash is obtained by using [Alt]+1/2).

Save it as block 1 then type in this line.

```
\[+] P 15 D [ENTER]_ [-] P / [+] P 15 D [ENTER] [SPACE] [-] P [ENTER]
```

And save this as block 2.

Now turn the codes off and delete both lines. Paste in block 1 repeatedly to get the line length you require. Press **[RETURN]**. Do the same on line 2 with block 2. When you've done all that press **[ALT]+[PAGE]** to go to the start of line 1. Nearly done.

At the start of line 1 type:  
 [+]**L P 8 [ENTER] [COPY] [PAGE] [COPY] 3.**  
 This saves your work as block 3. To complete a full page repeat  
 [PASTE]3 until you get the grid to the size you require. Printing out in  
 draft quality gives the best results

**Sue Jones, Shrewsbury**

**Sue Jones, Shrewsbury**

```

M:\LETTERS\7\GRND...DOC Editing text. Printer idle, Using M:
Script 1: 0 P112 L51 CR=0 LP6 Page 1 line
f1=Actions f2=Layout f3=Style f4=Size f5=Page f7=Spell f8=Options
<(*Pitch150) (-Pitch) (*Pitch150) (-Pitch)
(*Pitch150) (-Pitch) (*Pitch150) (-Pitch)

```

A few well chosen and saved phrases will provide you with a patchwork quilt in LogoScript.

Script 1: 0 P112 L51 CR10 LP6 Printer File Using M: Page 1 line

The transformation from phrase to fact. Your grid is complete. Now find a use for it.



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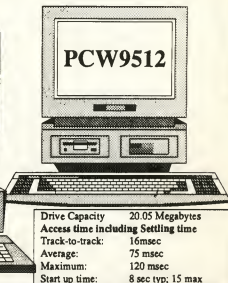
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- 2) 2 drives of 10 megabytes as drives C: & D:
- 3) 1 drive of 15 & 1 drive of 5 as drive C: & D:
- 4) 1 drive of 10 & 2 drives of 5 as C:, D:, & E:
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is now available for *all* Amstrad PCW models.

It is designed to allow anyone to examine, copy and recover information from damaged or corrupted discs. Although ToolKit is a full-function disc editor, you don't need to be an expert to use it! The manual too is comprehensive but straightforward, and includes features such as a "First Aid" section for quick answers in an emergency.

PCW-Toolkit costs just **£24.95**

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your copy of is in some way corrupt. If this is true of your master discs as well, Amstrad should replace them under warranty.

As far as your comment about resetting the PCW is concerned; once the PCW is turned off all the information in memory is lost. Make sure that you are saving your work to disc every ten minutes or so, or invest in a battery back-up.

You can turn off your PCW monitor without losing data using a small battery back-up box which fits into the serial port at the rear of your machine. It will cost you a few pounds but save you the worry. There are several of these back-ups on the market. Isenstein sell them for £34.95 and are on (0244 320-240). This won't help if you have to reset the machine since a reset clears the memory by writing over it.

## Pixel packing mama

**T** On the Stop Press system disc is a demonstration file for creating blank disc labels. I wondered how easy it would be to create such labels for audio cassette cases. Because the image on the screen is actually larger than the printed result,

## The truth writ large

**T** I enclose a poster which I have just made up using Letta-Head Plus. It is possible to use the Link function to print sections one on top of the other instead of separate pieces as I have done. It does illustrate the capability of the program to print out even larger posters should they be required.

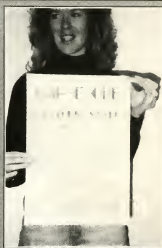
Originally I had problems producing a double height and width poster. I found that I could print double height easily enough but getting the width proved troublesome. The reason for this is that the PCW printer isn't wide enough.

To get around this I saved the

poster to disc. I then used the erase facility to clear those sections of each screen which had been printed. Erase, allows you to position a box over the required area(s) in order to clear them with accuracy. The next thing to do was use the Scroll function to bring those areas which haven't been printed over to the left of the screen. I saved these screens to disc under a new name in order to re-produce the poster at a later date. All in all I ended up with six files for later use.

The final action was to send each saved section to the printer. All I had to do then was stick the different parts together.

**D W Stokes  
Launceston  
Cornwall**



The results of Letta-Head labelling into the night. Large print and clear definition.

sizing was obviously the main problem.

I managed to measure the pixel size of these labels as they appeared on the screen. I then worked out a formula for calculating the size of any labels I could wish to design. The formula is as follows:

1 "X" pixel=0.209mm or 119 pixels to the inch.

1 "Y" pixel=0.459mm or 54 pixels to the inch.

If, like me, you don't think that you

will be able to remember the formula simply print it on the label of your working disc.  
**Nick Morice-Jones  
Chatham Kent**

## B: keeping

**T** Recently we have been hearing about 8512s refusing to recognise their B: drives. What should be happening is this. After the green bars appear, the the screen clears and control is passed to the relevant EMS file.

Early on in the proceedings with LocoScript the floppy disc controller is initialised and a flag is set in memory to indicate the status of each drive. This same flag is used to determine whether PCW 8256 or 8512 should appear on the title page and the disc manager screen. Other than these functions it serves no other purpose in LocoScript operations.

For any of those 8512 owners whose B: drive is not registering or even for 8256 owners who would like to pretend they have an additional drive, this patch to J126LOCO.EMS is a superficial solution. The purpose of it is to set the flag from within the software and hence trick LocoScript into believing it has two drives.

First call up SID.COM, copy both this and J126LOCO.EMS to the M: drive. At the # prompt type the following:

**#J126LOCO.EMS  
#SW3F9A**

You will then see this:  
**#3F9A CD01**

Simply type in CD00 and [RETURN] to alter this area, then type a full stop and finally save the file on another disc with the command **#WJ126LOCO.EMS**. This version of LocoScript tests for the presence of the A: drive. On finding the drive it sets the flag, convincing itself that a B: drive is fitted. Nice bit of trivia.

**John Egelling  
Tadmorden  
Lancs**

```

MS-DOS
CP/M 3 SID - Version 3.0
NEXT MS23 PC END
ALUS 3100 0100 3A1F
3F9A CD01 00

```

Invoke SID.COM, to edit the GSX driver

```

MS-DOS
CP/M 3 SID - Version 3.0
NEXT MS23 PC END
ALUS 3100 0100 3A1F
3F9A CD01 00

```

Altering the information at 359A from CD01 to CD00.

```

MS-DOS
CP/M 3 SID - Version 3.0
NEXT MS23 PC END
ALUS 3100 0100 3A1F
3F9A CD01 00
3F9A CD00 00

```

Job done. The new file is written to a new disc.

## Keys to Mini Office

**T** One of the more irritating aspects of Mini Office Professional's Manual is the lack of information relating to keypresses. What

actually does happen when you press [ALT]+[SHIFT]+Z?

In order to clear up this mystery I have put together the following list of both [ALT] and [CTRL] key combinations.  
**Rick Johnston  
Belmont**

### MINI OFFICE PROFESSIONAL

#### The Shift/Alt Alphabetical Controls

Type of Control	Effect
E Printing	Hold print
C Printing	Condensed structure
D Special	Business field or wiring
E Printing	Section
F Printing	File print
G Printing	Form deleted
I Printing	Reader deleted
J Printing	Table grouping
K Justification	Justified in both margins or continue all lines
L Line spacing	Lines can be jumped
M Justification	Justified or continue a single line
N Page	New page character inserted
O Printing	Ordinary print returned
P Printing	Page number inserted
Q Printing	Section printing
R Printing	Superimpose or subprint
T Printing	Full or double height
U Printing	Underlines
V Line Spacing	Vertical line spacing or height of line set
W Printing	Wide character
Z Special	'Eject' to printing/printout output

#### Extra Alphabetical Controls

A Special	A word count
B Move	Block moves
C Reorganise	Copies defined block
D Delete	Deletes marked and blocks
F Move	Form group a word or phrase to the last use of the word or phrase
G Move	Go to line number entered
H Move	Header moves
I Move	Integrate marker moves
J Move	Joined marker moves
K Reorganise	'Repeat' and 'Repeat control' characters
L Case Change	Line case changes
M Reorganise	Marker inserted
N Delete	Control characters & a current marker deleted
P Move	Page number moves followed by line number prompt; moves as 0 to normal, add
S Case Change	Transfers or pastes copied
T Case Change	Upper case changes
V Move	Shifts you to the start of previous page
W Move	Use to the end of your text or the next ruler subdivision closes screen

All you ever wanted to know about Mini-Office keys and didn't know where to look. You do now.



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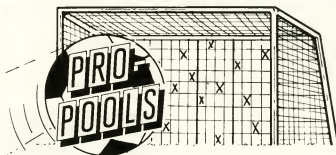
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# The Good Software File

## Word Processors

### PROTEXT/ POCKET PROTEXT

£59.95/£29.95 - Amstrad - 0733 68909

The best CP/M wordprocessor. Very fast at moving around large files, and packed with features. Works with key combinations rather than menus, but uses LocoScript keys too. Comes complete with a good spelling checker, a lightning fast word counter and a very powerful mailmerger. Pocket Protext is a stripped down version - essentially the same word processing features, but no spell checker or mailmerger, and lacking one or two incidental facilities like two column printing. Specify which machine you have when buying.

#### PLUSES - MINUSES

- ▲ Complete with spelling checker/word counter
- ▲ Packed with features, eg. calculate facility, text editor for writing programs, 'print to screen' option etc.
- ▲ Lets you work with two documents at once
- ▲ You can do all of CP/M's functions without leaving Protext
- ▲ Very fast at moving around, doing exchanges and so on
- ▲ Extremely powerful and flexible mailmerger
- ▲ Forces you to learn another new set of control keys to use it
- ▼ Not as slick as LocoScript in its printer controls

### EASY LABELLER

£34.44 - M.A.S.S. - 0603 630768

Labelling program which stores your names and address list and will print out in label format selected items from it.

#### PLUSES - MINUSES

- ▲ Useful options like printing out current date
- ▲ Good search facilities
- ▲ Range of printing options will fit most stationary
- ▼ Data needs an entire disc to itself
- ▼ Data entry is slowed by constant returning to main menu

### LOCOSCRIPT 2

£24.95 - Locomotive Software - 0306 740606

As bundled with new 9512, the first version of everyone's first word processor. If you know how LocoScript 1 works, you'll have minimal relearning to do, and it puts right (almost) all the defects of the old version at a rock bottom price. Greek and Cyrillic alphabets, and even lets you define up to sixteen characters of your own design.

#### PLUSES - MINUSES

- ▲ 'Find page' command makes moving around faster
- ▲ Superb range of foreign accents and symbols available
- ▲ Can now drive daisywheel and other printers
- ▲ Has DISCKIT's formatting and copying built into it
- ▲ New 300 page manual
- ▼ Mailmerger and spelling checker not included
- ▼ Inconvenient for regular CP/M users
- ▼ Still no word counter!
- ▼ Still slow at Find, Exchange and scrolling

These pages provide a comprehensive guide to the Amstrad PCW software. Published in three monthly parts, this time it's the turn of Word Processors (including Desk Top Publishers), Accounts/Payroll packages and Utilities. We've set out to cover every important piece of software we could lay our hands on, and to give you enough information to decide whether they are suitable for you.

All software will run on both the 9512 and the 8000 series machines, though the former's daisywheel printer cannot print graphical output.

The selection isn't too comprehensive, but the software listed here represents what we think is the best of that currently available.

As well as a brief summary of what they do, the main Plus and Minus points for each program are listed - Pluses have a ▲ by them, Minuses a ▼. Those we think are particularly noteworthy have a corner flash.

Have fun window shopping!

## LOCOSPELL

£19.95 - Locomotive/Amsoft - 0306 740606

The ultimate spelling checker for LocoScript users. It is run as a simple menu choice while you are editing a document normally, and you can check either an entire document or only a paragraph. When it finds an error, it suggests a correction. Reasonably fast, given LocoScript's inherent slowness.

#### PLUSES - MINUSES

- ▲ Runs totally from within LocoScript
- ▲ Can do small sections of a file
- ▲ Suggests alternatives for misspelt words
- ▲ Reformats the text as it makes corrections
- ▲ Provides the much-missed LocoScript word counter
- ▼ Can't remove spellings you don't like
- ▼ The manual gets bogged down sometimes
- ▼ Slow at scrolling the dictionary window

## LOCOMAIL

£29.95 - Locomotive/Amsoft - 0306 740606

As a mailmerger for LocoScript, it's difficult to see how anything could be better than this. It runs directly from LocoScript, and can process any LocoScript commands. Has many advanced features and is highly recommended for all LocoScript users.

#### PLUSES - MINUSES

- ▲ You don't have to run it from CP/M
- ▲ Can print any LocoScript text formatting commands
- ▲ Can automatically rejustify paragraphs after insertion
- ▲ Can insert numeric calculations into letters
- ▲ Can read data from non-LocoScript (ie. ASCII) files
- ▲ Large manual, with example files on disc
- ▲ Powerful selection procedures - like a database
- ▼ Need separate program to sort and filter addresses before a print run

## PROSPELL

£29.95 - Amstrad - 0733 68909

A stand-alone spell checker for use with almost any wordprocessor that runs on the PCWs. Reads LocoScript, WordStar and ASCII files, and allows you to make corrections directly, view the context, change the dictionary etc. Specify which machine when buying.

#### PLUSES - MINUSES

- ▲ Checks LocoScript and WordStar documents directly.
- ▲ Displays the context of a suspect word
- ▲ Can edit misspellings directly from Prospell
- ▲ Anagram and crossword solvers too
- ▼ Processes files of 15K or more in sections

## POCKET WORDSTAR

£49.95 - MicroPro/Davis Rubin - 0386 853610

For many business users, word processing means Word Star. Almost everywhere you could need in a text processor is here and despite the title this 'Pocket' version has all the features of the original. Efficient and proven, but now showing its age and there are alternatives unless you are committed to WordStar already. £20 extra buys the De Luxe version with spell checker.

#### PLUSES - MINUSES

- ▲ Probably the world's most widely used word processor
- ▲ Documentation is complex but well-structured
- ▲ Includes a mail merge utility

- ▲ Keystroke commands fully described on on-screen menus
- ▼ Doesn't make full use of the PCW keyboard and printer
- ▼ Page and margin formatting commands awkward to use

## NEWWORD

£69.00 - NewStar Software - 0277 220573

NewWord exploits the WordStar market by doing the same job better. It uses much the same key commands as WordStar and will even edit documents prepared under WordStar. Comes with a spelling checker, and the on-screen help is slightly better than WordStar's, though the keystrokes are still as obscure.

#### PLUSES - MINUSES

- ▲ Does everything WordStar does, even reads WordStar files
- ▲ Spelling checker included
- ▲ Can un-erase words and lines
- ▲ Onscreen help better than WordStar's
- ▲ Full reformatting of text within mailmerger
- ▼ Weak on use of keypad and printer support
- ▼ Like WordStar, formatting troubles and obscure commands

## LABEL PRINTER

£25.00 - Microdraw - 0622 685481

Very similar program to Easy Labeler if not quite as powerful. Useful features of a labeler and you can store comments with each label's data.

#### PLUSES - MINUSES

- ▲ Menu simple - easy to get the program going
- ▲ Fast data entry
- ▲ Can store comments with each entry
- ▼ No import or export of data
- ▼ Data needs an entire disc to itself

## LOCOKEY

£14.95 - Locomotive Software - 0306 740606

This successor to LocoChar is a keyboard customiser which means that any key can be made to produce any letter. The program will reproduce any one of the sixteen LocoChar-defined characters.

#### PLUSES - MINUSES

- ▲ Enables customisation to any distribution of keyboard letters
- ▲ Handles any combinations of accent and character
- ▲ Is fun and easy to use
- ▼ Will only be of limited use

## ANSIBLEINDEX PLUS

£29.95 - Ansible Information - 0672 62576

The upgraded version of the LocoScript document indexer. Type in your LocoScript document as normal highlighting the words to be indexed with a LocoScript (+RV) code. The program will then compile an alphabetical list of entries complete with the page number on which they appear. A friendly, useful little package.

#### PLUSES - MINUSES

- ▲ Don't need to convert files into ASCII files
- ▲ Word counter also included
- ▲ Runs with both LocoScript 1 and 2
- ▲ One index can be created for a series of documents
- ▲ Indexes can be edited on screen
- ▲ Index entries can be inverted; instead of 'mutton pie', for example, 'pie, mutton'.

## GOOD SOFTWARE GUIDE

# Accounts

## MONEY MANAGER PLUS

**£39.95 • Connect Systems Ltd • 01 743 9792**

The souped-up version of the personal accounts package Money Manager which would serve a small business quite nicely. It acts as a daily diary, over 12 months, recording all incomes and outgoings between up to 9 accounts. Similar transactions can be grouped together, and simple reports can be printed. Money Manager also available for £24.95

### PLUSES - MINUSES

- ▲ Simple to use, need no accounts or computer knowledge
- ▲ Standing orders can be defined for each month
- ▲ Detailed and summary statements can be printed out
- ▲ VAT reports can be separated out
- ▲ No audit trail integrity
- ▲ No audit trail integrity
- ▲ The statement format is not very flexible
- ▲ Transfers between accounts are not cross-referenced

## VITAL PROCESSOR SERIES

**£29.90 each • Vital Software • 0732 810330**

Series of three programs designed to help you look after your money and your assets. The Savings Processor is ideal for someone with a portfolio of stocks and shares; the Insurance Processor helps you make an inventory of all your possessions and put a value on them, while the Income Processor helps you keep tabs on your incomes and outgoings.

### PLUSES - MINUSES

- ▲ Income Processor allows you to budget efficiently
- ▲ Insurance Processor can complete inventories room by room
- ▲ Savings Processor is a fast and efficient way of keeping track of share values
- ▲ You have to be keen to do all the research
- ▲ It can be time-consuming
- ▲ With the Income Processor, it's difficult getting all the information you need from the manual
- ▲ It's not always clear how some of the operations work

## CHECK ACCOUNT II

**£14.95 • Molesoft • 03722 75053**

Written specifically for the home user, this program maintains four accounts per disc in familiar bank-statement form. Its analysis feature shows trends and forecasts how much you can afford to spend. The interest-estimating feature can keep track of Building Society accounts where interest earned varies with the amount deposited.

### PLUSES - MINUSES

- ▲ Designed solely for home accounts
- ▲ Easy to learn from demo file
- ▲ Relatively slow screen update
- ▲ You have to be organised to keep it up to date

## DIGITA BUSINESS CONTROLLER

**£69.95 • Digita International • 0395 270273**

Not a full accounting system, but a very easy-to-use package with an excellent manual. Nominal ledger already set up and you can be up and running in minutes. No aged creditor/debtor lists can be produced, and problems with VAT handling—not really for VAT businesses. For other small business it's very good value.

### PLUSES - MINUSES

- ▲ Ought to use with a very good manual
- ▲ You can get the system working in minutes
- ▲ Financial ratios can be included in reports
- ▲ No facility for producing aged debtors'/creditors list

## BOOK-KEEPING AND ACCOUNTS

**£69 (with invoicing, £80.50; with invoicing and stocks, £92) • Manx Tapes • 0624 813071**

Recently updated suite of programs advocating a very traditional style of double-entry book-keeping. Useful demonstration disc also supplied with more than 200 example accounts.

### PLUSES - MINUSES

- ▲ Solid, traditional approach to double-entry book-keeping
- ▲ Program doesn't make full use of the PCW
- ▲ Screen prompts not always that helpful
- ▲ Written in BASIC, so prone to sluggishness

## COMPACT ACCOUNTS

**£149.00 • Compact Software Ltd • 0703 611214**

Another very large integrated package supplied on several discs and consisting of sales, purchase and nominal ledger together with invoicing. The package is available on much larger micros, and shows the format in which data is produced is the same as on PCWs, the system is particularly suitable for users planning to upgrade their hardware at a later date.

### PLUSES - MINUSES

- ▲ Audit trails are an auditor's dream
- ▲ Data can be used in WordStar, Multiplan or SuperCalc 2
- ▲ Superb prepayment facility
- ▲ Can run a number of companies separately
- ▲ Easily transported to bigger computers
- ▲ Lots of disc swapping necessary
- ▲ Can be slow to use – it runs in Malford Basic
- ▲ Quirks in cash allocation routine and account code system

## M.A.P. INTEGRATED ACCOUNTS

**£125.00 • MAP Systems • 061 624 5662/3**

This is a very powerful package moved onto the PCW at a fraction of its cost on larger micros. The size makes it a little cumbersome to use, but apart from that there are very few significant problems. The integrated suite includes the same five modules as Camsoft, but they are supplied on four sides of disc, making it effectively impossible for the software to be run as an integrated system on an unexpanded 8256.

### PLUSES - MINUSES

- ▲ A very comprehensive and professional package
- ▲ Very good audit trails
- ▲ Sales/purchase ledgers can run over different periods
- ▲ Facility for handling prepayments and accruals
- ▲ Able to print full management accounts
- ▲ The size of the programs means lots of disc swapping
- ▲ All normal responses need to be in upper case

## CORNIX SIMPLE ACCOUNTS

**£49.95 • Cornix • 0462 682989**

Simple cash-book style package which allows you to keep track of debtors and creditors (though not aged ones). Simple to use and you can make changes if you make a mistake. Slow to use for complex operations and number of entries in given period is limited, but very good simple program for small businesses.

### PLUSES - MINUSES

- ▲ Simple, easy-to-use program
- ▲ Can correct errors
- ▲ Keeps track of debtors and creditors
- ▲ Slow for complex operations
- ▲ Ability to alter figures won't please accounting purists

## CAMSOFT PSIL

**£149.95 • Cambrian Software • 0766 831678**

Consists of five integrated packages: Sales, purchase and nominal ledgers, invoicing and stock control. In terms of sophistication it falls somewhere between the SageSoft package and the larger systems from MAP and Compact. But it's easier to run than the larger packages since all the software can be squeezed into the M drive. Good package for a small company.

### PLUSES - MINUSES

- ▲ Already set up for 8256 or 8512
- ▲ No need for pre printed stationery
- ▲ Excellent sort and search facilities
- ▲ Invoices shown on screen as you create them
- ▲ Constant need to input full five-digit account codes
- ▲ No final accounts reports available on nominal ledger

- ▼ No facility to run the ledgers in different accounting periods

## IN BUSINESS

**£149.00 • Cavalier Software • 01-639 6683**

A comprehensive integrated package. Comprises 'Intrac' accounts and 'Instock' stock control, available separately for £59.50 each. Well designed, easy to run and powerful enough for most businesses.

### PLUSES - MINUSES

- ▲ Other packages (eg. Teleadf address book) can be added
- ▲ Comprehensive range of features when used as a package
- ▲ Sophisticated pricing and order features in Instock section
- ▲ Flexible accounts, traps most mistakes, useful summaries
- ▲ Interesting forward planning facility in stock control
- ▼ Manual gives you a confusing number of options

## SMALL BUSINESS ACCOUNTS

**£69.95 • NewStar • 0245 265017**

Using the split-screen method, the prompt-driven program leads you through the hazy world of double-entry book-keeping as painlessly as possible. Again, very useful demonstration files supplied with the program. It also handles VAT easily.

### PLUSES - MINUSES

- ▲ Excellent system of screen prompts
- ▲ Good demonstration files
- ▲ One of the easiest double-entry systems for the novice
- ▼ Manual is really for the PC

## SAGE ACCOUNTS

**£87 • SageSoft • 091-2131553**

An integrated accounts package consisting of purchase, sales and nominal ledgers. For another £50 you can buy Accounts Plus which also has invoicing and stock control. Aimed at small companies with the emphasis on ease of setting up. But a number of limitations, eg. the package cannot cope too easily with rapidly increasing numbers of customers and suppliers.

### PLUSES - MINUSES

- ▲ Clean, tidy and logical screen layouts and menus
- ▲ Easy to set up and use with excellent documentation
- ▲ Good audit trails and VAT reports
- ▲ Can produce formatted trial balances
- ▲ Restrictive account numbering system
- ▲ Only single Nominal ledger and VAT analysis per item
- ▲ Does not cater for settlement discounts
- ▲ Won't print reminder advice slips
- ▼ Cramped on 8512 printer – need 17 pitch daisywheel

## M.A.P. PAYROLL

**£60 • MAP Systems • 061 624 5662**

### PLUSES - MINUSES

- ▲ Can amend and re-run at any stage (even after printing)
- ▲ Cash analysis is broken down into departments
- ▲ System prevents re-use or amendment of leavers
- ▲ Can hold up to 40 standard hourly and weekly wage rates
- ▼ No SSP calculation facility (but can record all amounts paid)
- ▼ Programs necessitate a lot of disc swapping
- ▼ No printed record of automatic tax code changes

## SAGESOFT POPULAR PAYROLL

**£61 • SageSoft • 091 2131555**

### PLUSES - MINUSES

- ▲ Any or all employees payroll can be rerun at any stage
- ▲ Full pay history available for all employees and leavers
- ▲ Calculates average pay for holidays etc
- ▲ Very easy to install
- ▲ Limited number of additions/deductions
- ▼ Doesn't print a list of cheques
- ▼ No analysis of additions/deductions

## COMPACT PAYROLL

**£99.95 • Compact Software Ltd • 0703 611214**

### PLUSES - MINUSES

- ▲ Supplied with test data
- ▲ Facility to change employees tax codes following budget
- ▲ Can run payroll for several companies



# PCWDRAW

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Hi Soft C	£38.95	Clock Chess 89	£13.95
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Money Manager PCW	£38.95	PCW Challenge (Compilation)	£19.99
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Pocket Protex	£26.95		
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## GOOD SOFTWARE GUIDE

- ▲ Program available for PC compatibles - data transportable
- ▲ Must be run from the master discs
- ▲ Needs input form and check calculation for each employee
- ▲ Once pay slips are printed nothing can be changed
- ▲ Most expensive payroll program

## CAMSOFT PAYROLL

£49.95 • Cambrian Software • 070 631672

### PLUSES - MINUSES

- ▲ Full payroll displayed on screen, any item can be amended
- ▲ Facility for freelance narrative on any payroll
- ▲ Uses M drive for programs to speed operation
- ▲ Built in on-screen help facility
- ▲ Search-sort routine for output to screen, printer or disc
- ▲ Uses alphanumeric employee codes
- ▲ Screen menus a bit tedious and sometimes difficult to follow
- ▼ No listing of cheques

## CHECK ACCOUNT TWO

£14.95 • Molesoft • 0372 275053

A program that has been written specifically to keep track of personal household accounts. As well as being able to store the details of up to four different accounts per disc, the program records all withdrawals and deposits and will allow an inspection of the current state of any account at any time. It also reveals both the minimum and maximum figures to which the balance has either sunk or risen over previous or current months. Also incorporated are comprehensive interest-calculating options. A solid, competent package.

### PLUSES - MINUSES

- ▲ No double-entry book-keeping or VAT returns to wrestle with
- ▲ Very easy to use
- ▲ Can carry next year's spending levels forward into the next month
- ▲ Tiered interest rate option available

## EASI-ACCOUNTS SYSTEM

£23.95 • Arcian Computer Ventures • 1 Foxwell Square, Southfields, Northampton NN3 5AT

Another PCW accounts package this time for the small business man or the very organised home user. Works on the traditional system of ledgers with up to 500 entries (or individual transactions) allowed per ledger.

### PLUSES - MINUSES

- ▲ Comprehensive List and Search facilities
- ▲ Manual assumes you know nothing about accounting and is, on the whole, well-written
- ▼ Not a particularly easy package to use
- ▼ You would have to be exceptionally well-organised to use it

## MONEY MANAGER PCW

£49.95 • Connect Software Ltd • 01 743 9792

This accounting package has been designed for individuals, small businesses and clubs - any who might find a larger accounting package daunting. The program concentrates on income and expenditures, each file covering a 12-month period with up to 500 entries per month.

### PLUSES - MINUSES

- ▲ Up to 20 different kinds of accounts are catered for
- ▲ Up to 50 transaction codes help categorise income and expenditure
- ▲ Needs little computer or accounting expertise
- ▲ Information can be displayed in the form of a bar or pie chart
- ▼ Too limited for bigger businesses
- ▼ Over-featured for domestic use

## DG PAYROLL

£39.95 (£79.95 for DG Payroll Plus) • Digita International • 0395 270273

A computerised payroll program for the small PCW-based business which covers all PAYE, Statutory Sick Pay and Statutory Maternity Pay requirements. The package can handle up to a hundred employees and their pay requirements whether they are weekly-paid or salaried staff.

### PLUSES - MINUSES

- ▲ Good menu arrangement
- ▲ Automatic calculation of deductions: SSP, etc
- ▲ End of year routine could save time
- ▼ Understanding and experience of PAYE is essential
- ▼ Basic version of software needs frequent updating

## Brainstorm

£29.99 • Brainstorm Software Ltd • 0895 677845

A new improved version, reconfigured for easier use on the PCW. Works as an 'ideas processor'; you throw your ideas in any order and then use the program to rearrange them and impose a structure.

### PLUSES - MINUSES

- ▲ Quick and efficient and easy to use
- ▲ Encourages structured thinking
- ▲ Versatile, many different editing facilities
- ▲ Results can be led into a word processor for polishing up
- ▼ Namesakes must be exact matches
- ▼ Manual is on disc, so you can't consult while using BrainStorm unless you print it out

## PCW DRAW

£39.95 • HTB Computing • 0794 516279

Drafting package written specifically for the PCW machines. Program is teaming with features - built-in shape and free-hand drawing facility - which, used with practice and imagination, could provide professional-looking output.

### PLUSES - MINUSES

- ▲ Very comprehensive text entry end printout format options
- ▲ ZOOM facility allows you to edit small sections of a draught pixel by pixel
- ▲ Many useful functions: different line thicknesses, hatching...
- ▼ ZOOM facility can't be printed out alone
- ▼ No editing of DETAILS file might prove restricting
- ▼ No support for plotting devices like mouse or light pen
- ▼ PCW Draw doesn't consider the PCW's screen aspect ratio: on-screen drawings look twice as high as wide

## PCW TOOLKIT

£19.95 • Moonstone Computing • 041 941 3120

A user-friendly data recovery package for the PCW. Provided you can find the contents of the damaged file, roll out a new one, sector by sector, on M using PASTE.

### PLUSES - MINUSES

- ▲ Perfect for the complete novice
- ▲ Clear, confidence-building manual
- ▲ Can recover data varying in amounts from a few bytes to a complete disc.

## PRO-PERFORMER

£59.95 • Electromusic Research • 0762 335747

The only true musical add-on for the PCW. Easy to use software runs on CP/M, has a wide variety of powerful features and is icon-driven. Sophisticated recording facilities and the program will allow you to save compositions as tracks, songs or performances. Ideal for pop and classical musicians.

### PLUSES - MINUSES

- ▲ Icon-based screen
- ▲ Can record lines independently or in an arrangement
- ▲ Punch-in editing facilities
- ▲ Facility for slow recording and fast playback
- ▲ Step-time recording for strict in tempo lines
- ▲ Tracks can be looped (made to repeat)
- ▲ Manual glosses over arrangements
- ▼ Can't edit notes individually
- ▼ No musical notation anywhere

## JOB ESTIMATING & PRODUCT COSTING

£79.90 each • Cornix Software • 0462 682989

Both programs aim to provide help to small businesses by keeping track of costs. You break down the product you're costing or the job you're doing into a series of costing lines - recording quantity and price per component. Program analyses profit margins and can produce customer printouts.

### PLUSES - MINUSES

- ▲ Excellent-written manuals
- ▲ Simple and robust to use
- ▲ Changes in material costs instantly reflected

### n ell quotes

- ▲ Neat way of doing on-the-spot quotes
- ▼ Only suitable for small to medium-sized businesses
- ▼ Can't add new components to a description

## TEIPDISC 8.2

£18.95 • Thurston Techniques (0395 277496) • 8512s only

Disc of ready-made templates to be used inside LocoScript 2. All you have to do is find the particular template to suit your requirements and then fill in the details. Vast selection of borders is excellent for personalising labels and envelopes.

### PLUSES - MINUSES

- ▲ Has included files to complement LocoMail's invoicing facilities
- ▲ Very easy to use
- ▲ Vast range of templates available
- ▼ Not so good if you don't like lots of visual trimmings

## FORMS BOX COMPENDIUM

£19.95 • Disc Design • 0522 40940

Fully compatible with LocoScript 1 and 2, this disc provides 70 different kinds of forms for home and office use. You can either fill them in on the screen, save and print them out or print them out and fill them in later. A solid, no frills product.

### PLUSES - MINUSES

- ▲ Very easy to use
- ▼ Will only print out on A4 size paper

## POOLS PREDICTOR

£15.99 • Corwen Computing • 0490 2902

This program helps you select the numbers to cross on your pooler coupon taking its recommendations on the recent form of each team or simply on the basis of sequence prediction (going on the numbers which have provided draws in the past).

### PLUSES - MINUSES

- ▲ Very easy to use
- ▲ More accurate than the newspaper pundits
- ▼ Entering form results from week to week is tedious

## LOCOFONT I

£19.95 • Locomotive Software (0306 740606) • 8000s only

A selection of new fonts to help you break out of the standard LocoScript typeface. There's a very good selection of styles to choose from: handwritten styles look very good as do the Copperplate and Script styles. The Roman and Standard fonts are more practical. The new characters are reproduced very well indeed. A further six fonts are available, including Old English and frowning script, on LocoFont II for £14.95.

### PLUSES - MINUSES

- ▲ Eight new fonts, one coming for free
- ▲ Each style supports all accents, characters, etc.
- ▲ Relatively cheap and easy to use
- ▲ Can break out of that one-pattern printout.
- ▼ Can't mix styles in one document
- ▼ Limitations of a 16-dot pattern means that the quality cannot be brilliant

## TAS-SIGN

£29.95 • Tasman Software • 0532 438301

Takes time to print out but you can print signs of up to five lines of text up to seven inches high with up to 32 characters in each. Four fonts, eight hatching patterns, and you can print lengthways on continuous paper for long signs.

### PLUSES - MINUSES

- ▲ Wide range of fonts and shadings
- ▲ Long signs will print out in 'landscape' (sideways) format
- ▼ Long signs take time
- ▼ Some symbols (yen signs etc) won't print out on PCW

## GILLIGAN'S GUIDE

£25-£30 • MG Gilligan • 0629 56347

A geographic information program based on the Ordnance Survey system. Concentrates on a given area (locally 15 square miles, it will list all the places included on the map in alphabetical order with their grid references. Also gives you information about the sites and will locate them on the map. You can also interrogate the system so that it only gives

you details and locations of special interest.

#### PLUSES-MINUSES

- ▲ A thorough, versatile and easy to use package
- ▲ System can be interrogated in a number of interesting ways
- ▲ Breaks sites down into areas of specific interest
- ▲ You can commission you own made-to-measure guides

## STAR TRACK

£14.95 • Discovery Software • 01 840 5252

A fun and informative program with which you can display on your computer screen all of the 88 constellations and 300 or so stars that are recognised by today's astronomers. You can also see how their positions in the sky change depending on your location (which could be anywhere in the world) and the time (any time between 1000 and 2000 AD).

#### PLUSES-MINUSES

- ▲ Excellent manual with helpful practice exercises
- ▲ Comprehensive list of ready-made latitudes and longitudes supplied
- ▲ Cycle option transports you forward a month at a time so that you can chart the stars' progress
- ▼ Screen displays could be more exciting
- ▼ Moon and planets aren't included

## DATA DIARY

£16.95 • A4 Ideas • 0249 815082

More PCW-generated diary inserts for use at home or in the office. The program works from within LocoScript so you can make use of all LocoScript 2's text and style enhancements. Inserts feature year to a page calendars, month at a glance planners and page a day diaries.

#### PLUSES-MINUSES

- ▲ Buy it at any time of the year and you will be supplied with next 12 months' supply
- ▲ 2 versions available - for A4-size and Floppy-size printout
- ▲ A solid, no-frills product that's easy to use

## INVESTOR

£29.95 • B & B Software • 0240 242496

Program has been designed to assist the share-owner in the management of a portfolio and to help in the choice of shares to buy and sell. It allows up to 300 stocks, shares or unit trusts to be kept in its library. Stocks are listed in order of their performance and you can call up graphs of price movement for individual stocks.

#### PLUSES-MINUSES

- ▲ Manual is very easy to follow
- ▲ Records share-holdings, dividends and cash accounts
- ▲ Dividend printout for tax purposes
- ▲ Four methods of share price analysis
- ▲ No ability to calculate taxable gains
- ▲ Graphs are small and lack expansion facility
- ▼ 9512 owners won't be able to print out the graphics

## PERSONAL TAX PLANNER

£24.95 • Digita International • 0395 270273

Simple program which asks you all the questions relevant to your year's tax affairs, and prepares your tax return claim (or bill). Can, for example, find out whether married couples would be better assessed separately or not. Annual updates available.

#### PLUSES-MINUSES

- ▲ Simple to use
- ▲ Needs a minimum knowledge of the tax law
- ▲ Forces you to keep your tax details in one place
- ▲ Limited application - might only use once a year
- ▲ Can't handle unusual cases
- ▼ Program updates (for a new allowance level) cost £10

## KNIFE PLUS

£19.95 • Hisoft • 0525 718181

An essential tool for retrieving data from corrupted discs. Knife Plus will copy all uncorrupted sectors on to a disc which you can then patch up without risking the original.

#### PLUSES-MINUSES

- ▲ Copies all uncorrupted data from damaged discs
- ▲ If boot sector damaged, will copy good boot sector onto disc
- ▼ Requires some knowledge of basic disc structure
- ▼ Manual not written for beginners

## WISE ONE

£34.95 • Swallowsoft Publications • 0420 63793

An expert system - you input rules and information and Wise One becomes an 'intelligent' program which can, for example, do simple diagnoses according to symptoms you type in. From PO Box 107, Walton on Thames, Surrey KT12 5PD.

#### PLUSES-MINUSES

- ▲ Power to be genuinely useful
- ▲ Elementary arithmetic
- ▲ Help screens can be set up for the user
- ▲ Obscure way of writing rules - need programming instinct
- ▼ Manual dry and academic

## FLIPPER 2

£29.95 • Software Imperative (0453 886931)

9512/8512 only.

Can do everything the original Flipper did and more. You can now flip Mini Office and LocoFile and will have no problems with whatever version of LocoScript you're using.

#### PLUSES-MINUSES

- ▲ Easier to install than its predecessor
- ▲ Can flip between environments in as little as 2 seconds
- ▲ Professionally-presented documentation
- ▲ Works with most CP/M programs, LocoScript and BASIC
- ▲ Still won't work with many self-loading games
- ▼ Be careful of state of printer and disc drives when flipping.

## SUPER TYPE II

£14.95 • Digita International • 0395 270273

A program for users of LocoScript and CP/M programs, which modifies the fonts used by the PCW printer. SuperType has 4 'business' and 'novelty' fonts. It works by directly altering the relevant files for LocoScript or CP/M, so you only need run it once - after that, the new chosen font is available.

#### PLUSES-MINUSES

- ▲ Once installed, you can totally forget it's there
- ▲ Generously useful range of fonts available
- ▲ All LocoScript's print size and style options still work
- ▼ You can't mix different fonts in the same document

## DAATAFAX

Basic version £39.95 (with Microfile

£49.95 with mouse £79.95) • Kempston Data •

0908 677886

Used with personal ring-binder, it helps you keep track of names, addresses and appointments. Prints out data in a form that will fit the average organizer.

#### PLUSES-MINUSES

- ▲ Flexible and easy to use; saves buying inserts
- ▼ Not very sophisticated - keeping it up to date is tedious

## DHCP 12-TRACK

£45 • DHCP • 0440 61207

The second add-on 'recording studio' for the PCW consisting of MIDI interface and software. Can cope with up to 12 tracks, all of which are polyphonic and which can be as long as the PCW memory allows. Can also cope with quite advanced instruments.

#### PLUSES-MINUSES

- ▲ Cheaper than its competitor
- ▲ Tracks can be bounced to enable several tracks to all be put into one
- ▲ Logging can start/end at any bar
- ▲ Add-ons available for Casio and Korg synthesizers
- ▼ Manual is skimpy
- ▼ No editing possible without re-recording whole tracks

## TP

## FLEET STREET EDITOR PLUS

£49.95 • Mirrorsoft • 01 928 1454

Versatile and powerful package. You can create template-like page dummies if you use several pages of the same format, and handling of text, setting of margins and size of text boxes etc. is well controlled.

#### PLUSES-MINUSES

- ▲ Versatile integrated package
- ▲ Text handling and editing sophisticated and controlled
- ▲ Can set up page dummies for regularly used formats
- ▲ Odd use of memory in text editor
- ▼ Still lots of serious bugs even now and crashes occasionally

## NEWSDESK INTERNATIONAL

£25 (with Lightpen £50) • The Electric Studio •

0462 420222

Versatile package with a wide variety of graphics facilities, and high quality headline text. Page make-up is flexible, though the program can be a bit cumbersome, mainly in text handling. Same graphics facilities as Electric Studio's 'Art' package which it supersedes.

#### PLUSES-MINUSES

- ▲ Good control over the elements on the page
- ▲ Powerful graphics facilities
- ▲ Good quality print in headlines and large fonts
- ▲ Can use font editor to create your own high quality fonts
- ▼ Text-handling slow and cumbersome; editing is difficult

## STOP PRESS

£49.95 • Database • 0625 878888

An excellent DTP package. Very strong on graphics, very well designed, and once you get used to it, easy to use. Sophisticated text handling features such as autowrap, but can't edit text - that all has to be done in your word processor before flowing the text in. A lot of good fonts supplied too.

#### PLUSES-MINUSES

- ▲ Excellent graphics facilities, good as any graphics program
- ▲ Wide range of text styles with text autowrap
- ▲ Menu and key commands system suits beginner and expert
- ▼ No text editing ability

## THE DESKTOP PUBLISHER

£29.95 • Database Software • 0625 878888

Tremendous value for money. Graphics and text boxes can be easily moved around and page layout is clear. You can edit text from within the program, using LocoScript-like commands to set bold and italics. Good range of fonts and graphics too, at half price of its rivals. Mouse optional for £250 more.

#### PLUSES-MINUSES

- ▲ Text editor allows you to edit articles to fit the space early
- ▲ Boxes and general layout easy to manipulate
- ▲ Works with three mice, but fine with keyboard alone
- ▲ Half the price of other packages
- ▲ Good range of fonts and graphics, and can design your own
- ▲ Can't fix size of text boxes - they expand to take all the text
- ▼ Headlines can look a bit jagged

## LATE EXTRA

£19.50 • Exemplar Designs • PO Box 683, Bath,

BA1 1XU

A Stop Press add-on consisting of a collection of 11 fonts that cover the range of type styles and sizes needed to create a balanced page. Also supplied on disc is a 13-page publication which describes how to create your own professionally-produced publication. Now you can create a good-looking page with readable text.

#### PLUSES-MINUSES

- ▲ Good range of 11 complementary fonts
- ▲ Can adapt template for own use
- ▼ Time-consuming
- ▼ Text needs reducing for best results

## MICRODESIGN II

£59.95 • Creative Technology • 0889 567160

The ultimate DTP package for sheer printout quality. Creative Technology regard the words and the graphics as being equally important, hence the program's integrated page processor 'label'. Runs on all three machines and produces very high quality results.

#### PLUSES-MINUSES

- ▲ Has full 24-pin printer compatibility
- ▲ Easy and fun to use
- ▲ Excellent text handling facilities
- ▲ Fully compatible with other word processor and DTP packages
- ▼ Won't run with Flipper



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- DIY tricks — screen filters for free, making your monitor swivel, doubling the life of your printer and ribbons and much more!
- Plus a host of other tips including, printing in SuperCalc 2, The Logo collection, silencing Tetris and LocoScript's beep, DTP tips, using a Z88 — and the free game that's hidden in your system disks!
- Valuable BASIC listings with utilities such as spreadsheet, label printer, mailmerger, indexer, sorting routines and lots more
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The book is based on the collected tipoffs in **8000 Plus** from issue 1 to the present day and covers every possible facet of PCW use. But it's not just a reprint — every item has been rewritten, re-illustrated and updated where necessary. Plus a whole host of new tips has been added to make this book the essential guide to PCW use.

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# POSTSCRIPT

Postal peregrinations perfectly presented by perfectionists (well at least it rhymes)

This is where we let you, the readers byle (sorry, bite) back. If we've amused, annoyed or amazed you then tell us all about it - how else will we find out? On the other foot, why not have a go at amusing, annoying or amazing us? A letter in Post Script could be the start of literary fame. Send your missile (sorry, missive) whining (no, wining) on its way to: Postscript, 4 Queen St, Bath, BA1 1EJ.

## Tick offs

A propos David Langford's column in the September issue (with which I fully concur), the lack of a hyphen means that another of your regular columns is entitled incorrectly. As you will no doubt be watching your T's and Q's from now on, I look forward with great delight to a 'Tips off' column in future editions - it has a far more exotic ring to it.

Adrian Rhodes  
Manchester

**8000 PLUS** I read a very good wall recently. Reading walls is a bit like visiting the reference library. You occasionally come across a really interesting bit but then find you can't take it home with you to read the rest at leisure in the bath. This one had pedants of the world point out.

## Deja Vu

I was going to write a letter to your TIPOFFS section, until I found my tip in 8000 Plus (Issue 1 October 1986 that a friend had just given me!) In the same issue there were some further good tips.

This prompts me to suggest the time has now come for you to do 'The best of 8000 Plus No 1' where you select from your past issue's tips, programs, letters and replies, etc edited as required. What do you think?

Is it best to issue it in magazine form, or a manual, or a paperback, or even a disc? And should it also include a directory

of suppliers and services, based on the advertisements and perhaps a list of software and equipment too? Or do you think future issues of 8000 Plus should have a page of 'Best Tips of 1986' etc? What do you think?

Ron Denyer  
Manchester

**8000 PLUS** Now if you'd had a subscription instead of waiting for your friends to give you their copies of 8000 Plus - a process which can take up to three years as you've discovered - you'd know that we've already done as you suggest. Rob Ainsley's Tipoffs book, ring bound to leave you both hands free for typing, can now be ordered from Somerton (see p. 81 of this issue). A special edition bound in Alligator skin or to match the TILOFAX™ of your choice is under consideration.

## Miss spelt?

I am a victim of planned obsolescence. My 9512 PCW printer is hors de combat. The part required is unobtainable by the company with whom I have a maintenance contract. What do I do? I do not want another Amstrad printer. What have other readers done in this situation?

R Rappaport  
London

**8000 PLUS** Is that how you spell 'hors'? Oh well, live and learn. All parts for all Amstrad printers, and indeed all other Amstrad parts, are available from CPC (Combined Precision Components PLC) who do trade distribution of Amstrad spares. Ring them for a quote on 0772

555034. I suspect your dealer was telling you a little fib, either that or he doesn't actually know how to do his job. Perm any one from two.

Buy another printer if you like, we can't recommend anything in particular since you give us nothing to go on. But if you aren't using an upgraded LocoScript 2 (2.29 is the latest) exclusively then you will have problems. You need the built in printer connected to get the extra one to work under CP/M.

## Contentious quotes

I refer to David Langford's pieces, in the August and September issues about quotation marks. My memory of (long ago) school days is indeed that double quotation marks are the norm. However coming from a family much involved in the printing trade, I always understood that 'Hart's Rules for compositors and readers' was the 'bible' for authors and printers and I quote from it: 'Single quotes' are to be used for the first quotation; then double for a quotation within a quotation. If there should be yet another quotation within the second quotation it is necessary to revert to single quotation marks.' The opposite of David Langford's contention

Norman Coltham  
Essex

**8000 PLUS** Treacherous ground this. In order to avoid any arguments we are devising new style guides for staff and contributors. All quotes will be identified with curly brackets, quotes inside other quotes will use a backslash and so on. Tim says (That seems a very good idea but you said 'What are we going to do about these quote marks Sharon? When she said [Should it be single quotes to start with now?]). We hope this will clarify the issue.

## A good idea

We have been both surprised and delighted with the response to the Useful Disk, the initial stock was sold out within one week of the launch. Because of this response, we are now considering a second Useful Disk, but we have run out of ideas for more programs. If any of your readers have an idea for a useful program or game, we are willing to listen.

David Greenhouse  
Bradford

**8000 PLUS** We here at Future Towers are all in favour of there being as many useful things in life as possible, however, please send your ideas direct to David Greenhouse at DGC Software, 37 Falkland Road, Bradford, BD10 0JT. Sorry we hear him say a free Useful Disk (surely he

means disc? - Ed) to everyone whose idea is accepted? It's rather a bad line.

## Feeling faint

Here's a funny (peculiar) thing. There was my newly-acquired 9512 printing its very first long document when, on the last page, the print became fainter and fainter. Hurried (!) look at the manual to abandon printing by which time nothing was coming out on the paper. A study of the ribbon showed it wasn't winding on. Wound it on with difficulty - same problem - and again - and again.

Dashed off to my favorite supplier. I thought he'd tell me that it was the first time it had happened, giv. But, surprise, surprise, he said it was a common problem with the ribbons supplied with the machines. Fifty per cent returns he said, yet no trouble with replacement ribbons. He then showed me the different wind-on constructions of the two types. Maybe you could comment, or even Amstrad!

Derek Lawton  
Sidmouth

**8000 PLUS** Amstrad didn't get to where they are today by commenting, you know. Not having an original ribbon in the place it's rather hard for us to comment either. We'll just take your word for it. If anyone has defunct examples of an original ribbon perhaps they'd like to let us take a look?

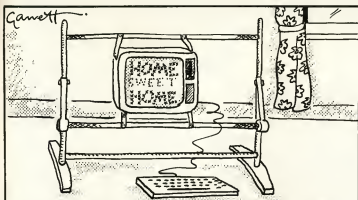
## Designs on you

Does anyone out there do counted cross-stitch and use a PCW? Counted cross-stitch, for those not in the know, is the sewing technique used in those homely samplers found on farmhouse walls all over America. It is done on square weave fabric and the stitches are, literally, counted out across and down the fabric. It's not a hobby for those with falling eyesight!

The U.S. counted cross-stitch magazines carry advertisements for a program to do the design stage on a computer and print out the result. That would be a great help to us and save an awful lot of graph paper, but those dreaded words appear: 'IBM PC Only'. We've scored the computer press and counted cross-stitch press here and can find no program that would run under CP/M, let alone on the PCW. Do you, or any of your readers, know where we might find a program to do this job?

Lola and Martin Taylor  
Lancashire

**8000 PLUS** I wouldn't be all that difficult to



design a program to do the job in Basic; it's certainly up to the job. The problem is that no one is likely to do it for nothing, few people, we suspect, combine an interest in programming and counted cross stitch to the extent of writing such a program for fun. If we're wrong write in and tell us so.

## Uneasy of South Harrow

As a regular reader of your magazine who happens to be gay I am not sure how to take the September offerings in the Postscript pages. I presume the 'queer quip' mentioned in the banner for these columns refers to the remark about pansies in your reply to David Aldred. While I appreciate the humour injected into what could otherwise be pretty dull pages I am nevertheless uneasy about this kind of joke.

What with anti-gay legislation introduced by this government and a huge increase in bigotry sparked off by the AIDS crisis this kind of humour makes me feel very uneasy. I suggest queer and pansy jokes will be acceptable when you feel happy about making nigger or wop jokes. Until then please take more care - unless you are deliberately trying to lose your gay readers.

**Brian Perry**  
Middlesex

**8000 PLUS** It seems we can't say anything without offending someone these days. The homosexual lobby are being a bit greedy in claiming all insults for themselves, not to mention hijacking perfectly good words for their own purposes. Can I no longer say queer without meaning homosexual? How many more words do you want? Why not try being a little less precious and demonstrate some of the tolerance you demand from others?

## Out of luck, and data

I have just bought the 8000 Plus Software Collection and, apart from having to return the first disc because side two was faulty, it seems fine and will, I hope, be very useful.

However, I've come up against a snag when preparing a disc for the GSX listings. I have an 8256 and on trying to copy the programs on side 4 of the systems disc, I find I can't copy DDFXHR8.PRL. What comes up is ERROR: DISK WRITE NO DATA BLOCK - M: DDFXHR8.\$\$\$\$. On running DIR the program is there but it seems I can't copy it. I used the original systems disc, not the backup. Can you explain this and how I can get round it?

**P.D'Arcy**  
Champney  
East Sussex

**8000 PLUS** There is a fault with the disc. Even though the directory entry is present there are no guarantees. The directory just says what it is and where it should be but when a program goes looking it may not find it - as you've discovered. Your only recourse is to ask Amstrad if they'll swap your faulty disc for a good one. Phone customer support on 0277 230222.

## A real character

Please accept my thanks for your earlier help with the LC-10 printer (I do - Ed.). Locomotive led me to understand that there was no simple way in their software to make use of the printer control commands offered by the LC-10 so I tried Protex. This appears a great improvement in many respects, except for simple correspondence and available symbols.

The very limited range of symbols is a problem in scientific work. My question is: is there no way of exploiting the symbols shown in the LC-10 handbook in the IBM character set (pp. 102-103)? Surely if these have been constructed in the printer software they could be got at?

**N. O. Clark**  
Cornwall

**8000 PLUS** Codes to display characters in the extended ASCII character set can be defined using the KEY command, thus allowing any character for the PCW character set to show onscreen. To get it

onto the printer is a little more complex. For this you need to build a printer driver especially for the LC-10 in IBM mode. You should be able to do this using the Protex SETPRINT utility (and we're not going to explain the whole process because it would take an article to itself - heavy work with the manual is called for).

## Life is hard, then you die

I have just started using Protex, and would recommend it to anyone. It is easier to do some things with LocoScript, but the speed plus the extra features makes Protex the winner for me. I see that you are selling Newword, there has ever been, or do you ever plan to do a review of it?

I am using a Star LC-10 with a PCW9512. Regarding problem of printing NLQ justified text in LocoScript 2, namely that the print head goes across the page in a series of jerks. I have found the best solution is to use the LX800 driver. Justified text then prints out perfectly. The problem is that Bold and Double-strike don't then work. Will Locomotive ever produce printer drivers that fully support such printers as the LC-10? This problem doesn't exist in Protex.

The main reason that I'm writing, I would very much like to print the Greek characters with LocoScript 2. The printer accepts download characters. Star Microbits have informed me that the printer will print the characters, as long as they are downloaded to the printer. I have written to Locomotive to ask if there is a printer driver that will download them to an LC-10. It seems that the answer is no. So therefore, how do I get the Greek character set downloaded without buying a 24 pin printer, which I don't wish to do?

**Edward P. Drohan**  
London

**8000 PLUS** As we understand it the Printer Driver discs from Locomotive now support the full range of Star printers. The Star LC-10 manual goes into great detail concerning designing and downloading new characters including supplying a sample Basic program. This is the simplest method for downloading characters.

## Thesis good

I received the leaflet from Amstrad announcing 'Thesis PS now available'. The quality of the typeface shown as a sample in the leaflet left much to be desired, but hoped that was something to do with the production of the leaflet and not with the wheel. I rushed to buy one for myself.

I am now writing the letter with the wheel after following the installing instructions. As you can see, the individual letters are very unevenly placed in relation to the line and many of them are poorly shaped. This is very inferior to the other daisy wheels I have used. I wondered if mine was a faulty wheel and wrote to Amstrad Consumer Services. Mrs H. Guy referred me to Keytec Industries Ltd, whose Sales Administrator, Janet Jones, offered to have my wheel inspected by their technical department. She then sent a replacement, which proved to be identical. She says that they have no plans to manufacture any additional 'wheels' for the Amstrad range.

**J Goodacre**  
Leicester

**8000 PLUS** We passed your letter around the office for comment and we have to say that it seemed reasonable to us. The letters appear smaller than those on a Courier wheel but nevertheless the effect is pleasant enough. A case of horses for courses perhaps?

## Larger than life

In your reply to N.O. Clark in a Tipoff question you revealed that the editor has a Star LC-10 printer. So maybe you have discovered how to do what neither I nor, apparently, N.O. Clark have been able to do, namely, access the very large fonts in the printers built in fonts, so as to use them in LocoScript 2.

**T.W. Alfred Poland**  
Portugal

**8000 PLUS** No.



"IT'S FROM MY BOYFRIEND - HE CAN DO GIANT LETTERS NOW IN LOCOSCRIPT..."

## Horror story

I bought a PCW8256 in February and discovered to my horror that Mallard doesn't support graphics; I've copied A.M. Baldwin's 'Surfaces' and played with it to produce some weird and wonderful landscapes, but I'm a haematologist, not a mathematician, so I can't sort the algorithm from the program - I learnt my programming by the suck it and see method on an Apple II at work.

I want to use my PCW to calculate and draw cave surveys, and rotate them as necessary. Where can I get the info, (or software) to do this? I live in the sticks, and the nearest thing to a computer shop around here is Dixons. Don't suggest the library - their computer books are mixed up with Erich Von-Daniken rubbish.

**Bill Edmondson**  
North Yorkshire

**8000 PLUS** You are asking rather a lot really, especially if you aren't a mathematician. Programming 3-D graphic structures is one of the current problems pushing very powerful computers to their limits. As for rotating them as well - well! To get some idea of the problems involved, and the solutions, see the answer to 'A new recruit' in *TiPto*.

## Sunny days

It was a hot Saturday afternoon; why should I sit inside doing (inescapable) work with my PCW, while my family go out to enjoy the sun? With a simple extension cable I can go to work outside, in the garden. But as soon as I try to start up, disaster strikes! Drive B is empty... and all my most valuable Locoscript files on it. Rebooting makes it worse, now Drive B isn't even ready. From CP/M, I get the same story. Not ready.

It must be my fault; my PCW has worked well for two years now. The B Drive was home installed, so something must be wrong there. To

take off the back, I have to take the machine indoors. My efforts are rewarded when it all works again, yes the Drive B too! Triumphant, and without even switching the power off, I carry my beloved PCW outside again and...you've guessed it, Drive B is again not ready.

**Roy Smiles**  
Bournemouth

**8000 PLUS** This is as bad a case of garden gnomes as we've ever come across. As you know garden gnomes (gnomus herbaeaceus) are a harder species of the more familiar gremlin (gnomus domesticus). Rotating your PCW three times wilderness in moonlight on the fourth Thursday after Septagesima will cure the problem. Disconnect from the mains first.

## Electronic talk

To Anthony N K Johnson in the September issue, 'You are about to b\*\*\*\*\* your PCW'. To anybody else who is contemplating taking up his suggestion, don't. Removing the heater supply from the tube whilst leaving the EHT voltages applied runs the definite risk of stripping the cathode. For the non-technical - the doohickies that make the green marks on the screen stop working. Regrettably, Anthony's submission is also faulty in terms of electronic failure. Modern solid state circuits survive switching on and off remarkably well. The bit that suffers when gadgetry is switched on is the HEATER, the very thing that he still switches.

The normal method of holding a piece of equipment at 'stand by' is to remove the HT voltages and leave the heaters on. Doubtless the PCW's circuitry could be modified to do this but I doubt if it would be worth the trouble. If you want to keep the PCW live then simply leave it on, it will come to less harm that way. But what are you doing with all the valuable seconds you are saving by not having to re-boot?

I'm sorry, Anthony, but the

advice from this friendly electronics engineer is to ask your guy to disable his switch.

**M S Tipper**  
Lincoln

**8000 PLUS** In the best spirit of investigative journalism the back of the editor's television was removed under non-laboratory conditions and examined. When the 'Standby' button on the pointy thing is pressed and the picture collapses the cathodes can clearly be seen glowing merrily away in the sharp end of the tube. When the pointy thing is used to select Channel Four (Club X featuring a fire eating transvestite, coloratura soprano singing Danny Boy) the EHT comes back on. Now we know (where is that Sky TV dish?).

## No connection

We talked on the telephone yesterday regarding the fact that my interface was incompatible with my PCW 8512. We have now remedied the matter in that the 8512 my husband uses at work is compatible (now they can use *Stop Press* - ed.).

My only query is why are the connectors on all three PCW 8512's - there are two at my husbands place of work and one for home use, all bought within a month of each other - why are they all different on the back? I look forward to hearing from you on this matter as presumably it may have future repercussions if we require other accessories.

**Mrs S White**  
Suffolk

**8000 PLUS** Regulations regarding low voltage electrical equipment in the UK are somewhat more relaxed than in many other countries. During a recent shortage of 8512s machines destined for other climes were re-routed to the UK, and now we can all see how these things are done in other countries. No doubt you have a European PCW, an American PCW and a British PCW - lucky you. Your dealer can get you a connector (for free) to adapt other PCWs for UK peripherals.

## Double or quits

'Hmmm' do you say? (Page 8 Issue 37). I would willingly pay a little extra for double density discs. Using single density discs for the B drive used to give me lots of those 'Address mark missing' messages referred to by Mr Ward (Strange but true on page 95 of the same issue.) Unlike him I don't seem to be able to recover them with a vacuum cleaner.

**Douglas Garbutt**  
Guildford

**8000 PLUS** Apparently there are a few

discs being made in such places as India which are truly unreliable in any drive. But those sold by Maxwell and the genuine article from the far east should be good for either drive. Perhaps your disc drive is simply getting a little cranky?

## Clean machine

I own an Amstrad PCW 9512 and have a friend who has an 8512. We went to the exhibition at Earls Court last week (so did we - Ed.) and at one of the stands we were induced to buy a 'head cleaning diskette' for £1.50.

The instructions tell one to insert the diskette and then to activate the drive mechanism for approximately 30 seconds. As neither I nor my friend could make sense of this I telephoned the Amstrad consumer advice number and asked for help. Their first piece of advice was to press the space bar (with the diskette in the drive); but this had no effect at all with the cleaning diskette remaining stationary.

I called Amstrad again and this time was told that they didn't recommend the use of this type of cleaner as it could damage the disk drive heads. This leaves us £3 out of pocket and distinctly puzzled as to whether or not we should clean our heads, and if so, how and how often? The salesman suggested once a week.

**John Engle**  
London

**8000 PLUS** The only reason for wanting to clean the disc drive heads is if you are getting read and write errors on a variety of discs. Otherwise they are working perfectly.

To engage the heads with a cleaning disc press [F7] from inside Locoscript or do a DIR or [ALT]; from CP/M. The drives will whirr and an error message will come up to the effect that the disc couldn't be read - hardly surprising really. Repeat to taste.

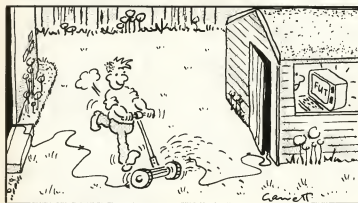
There is a lot to be said for the old advice - 'if it isn't broken, don't fix it'.

## Better software

Here's how to improve your Good Software Guide.

1/ Use symbols that differentiate clearly between the pluses and minuses. Those tiny black triangles look far too much alike whichever way up they are.  
2/ Include the date of the issue of 8000 PLUS in which the item was last reviewed. This would save a lot of digging around among indexes and back copies.

**8000 PLUS** Here's how to improve your living room. Get rid of that awful wallpaper and put up a nice William Morris design in that red furry stuff they have in steak bars and then (continued page 93).





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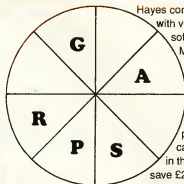
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# COMPETITION

A chance to get into the fascinating world of electronic communications this month with a new Hi-Tec EC2400 modem

**N**ow having the full blessing of BT's approval Hi-Tec are celebrating by offering one of their new full-featured modems in our easy to enter competition. Yes, enter this one and 8000 Plus might bring you more than Santa this Christmas.

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Hayes compatible (so it will work with virtually any comms software) and has built-in MNP error correction to level 4. It boasts autodial and auto answer and will work on any computer, not just the PCW. But perhaps best of all you can come into comms in the fast lane and still save £279!

And what do you have to do to win

one of these highly desirable high-tech Hi-Tecs? Simple enough, just complete the Word Circle on the right (as supplied by Thomas Jones) by filling in the missing letters so that it forms a computer-related word.

Send in your entries on a postcard or the back of a sealed envelope to 8000 Plus Competition, 4 Queen Street, Bath, BA1 1EJ. The closing date is December 20th so don't delay.

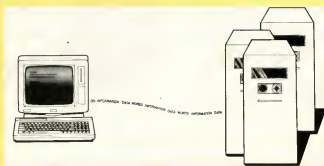
## This month – next month

This has certainly been another exciting issue. Who'd have thought that the ever so humble PCW might be the vehicle for a software product as important and innovative as Composers Pen? There really is nothing quite like it on any other system that we know. Once again it goes to show that it isn't so much the computer that counts as the programmers who make it actually do something. In this case something not seen before.

There seem to be quite a few games appearing on the PCW again, or threatening to appear. We know of several in the pipeline that we plan to look at. Could it just be that time of year again?

The end of the road for our current series on SuperCalc this month, with black boxes finally having some light shone into them. It took us a while to get there but we've finally done it. Many thanks to Tim Nott for the series.

A final thought: the PCW, more than any other machine, attracts enthusiasts who use it at home for purposes other than game playing. This month we took a look at the changes to copyright law for the writers and programmers. If there are other subjects that affect you that you'd like covered – write and tell us.



### ● Databases catalogued

A look at the general purpose databases in the PCW market. If you're thinking of buying a database this is the one you don't want to miss.

### ● Interfaces

To get out into the rest of the world, even to use a printer, you'll probably need an interface. We tell you what they are, how they work and look at those available.

### ● Daisywheels

The secrets of printing using more than one wheel in a document.

### ● New Protex characters

How to print in different languages using Protex. Ian Goodhardt uses Protex to print in Hebrew!

### ● LocoScript layouts

How to design a good looking page template under Locoscript.

### ● CP/M

We look at the often misunderstood RPED text editor.

### ● Databases on-line

A modem can give you access to enormous commercial databases.

### ● Pampering your PCW

Treats and tips to help your machine live longer

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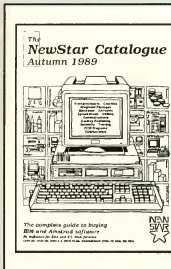
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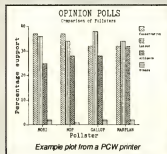
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